

Con il patrocinio di



Associazione Italiana Pneumologi Ospedalieri



# PNEUMOLOGIA 2016

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# PATTERN HRCT PER LA DIAGNOSI DIFFERENZIALE DELLE PNEUMOPATIE NON FIBROSANTI

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Ospedale San Giuseppe-MULTIMEDICA  
MILANO

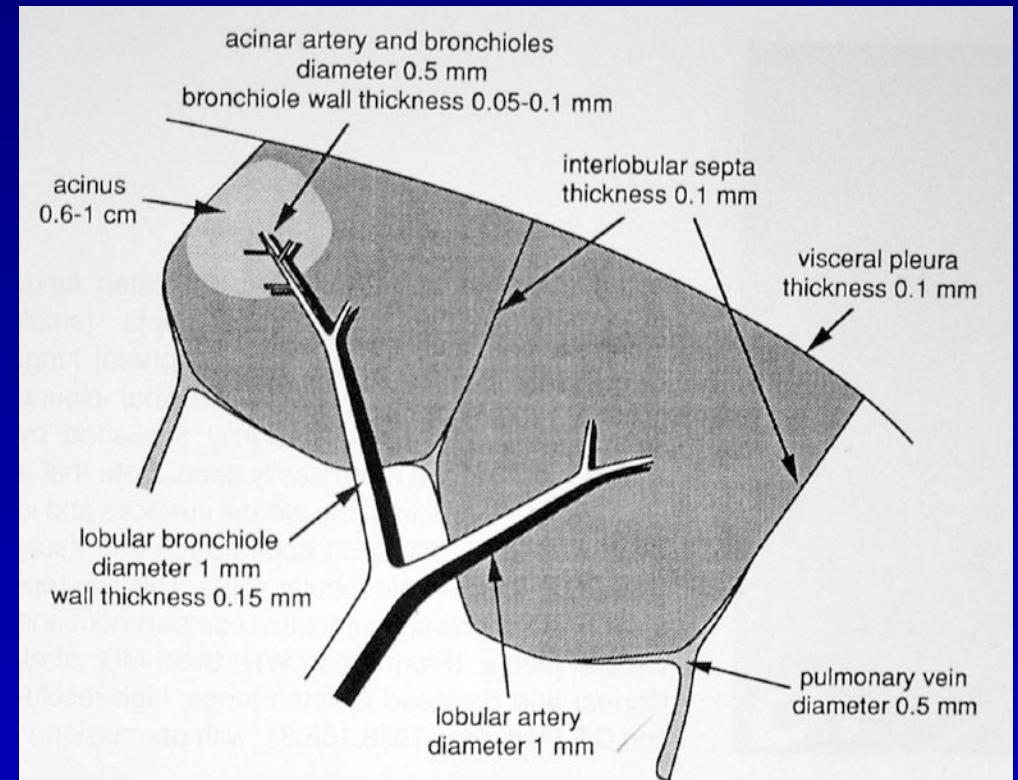
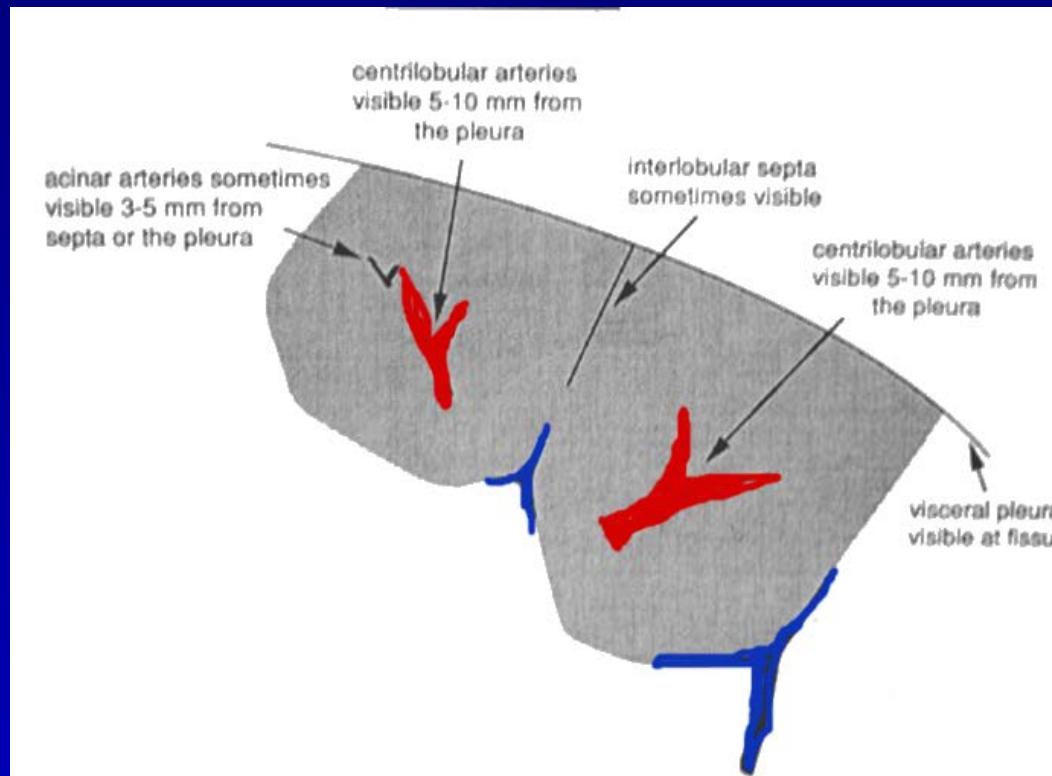
# HRCT

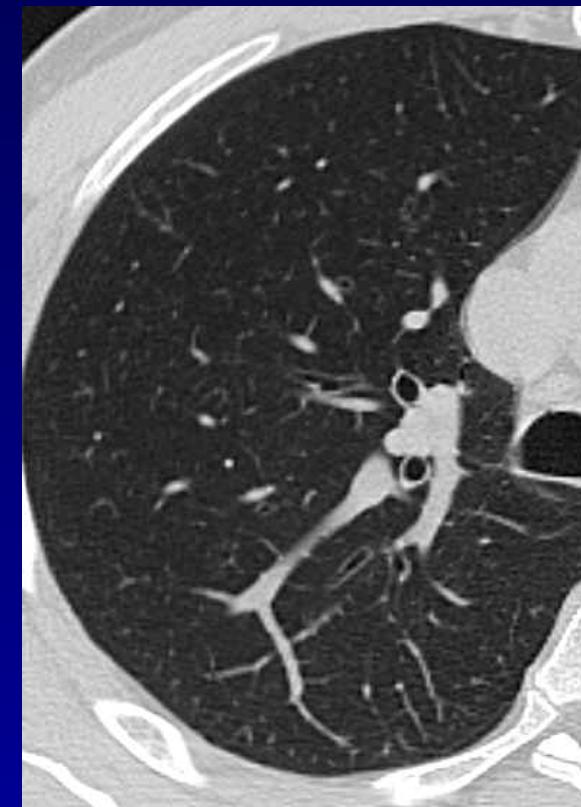
Tecnica di tomografia computerizzata caratterizzata da **elevata risoluzione spaziale** che consente l'acquisizione in vivo di immagini paragonabili ad un preparato anatomico.

Permette l'identificazione del **lobulo secondario** la più piccola porzione di polmone delimitata da setti connettivali  
**(0,2- 0,3mm)**

# HRCT Anatomia

**Lobulo secondario** unità anatomica funzionale del polmone delimitata da setti connettivali



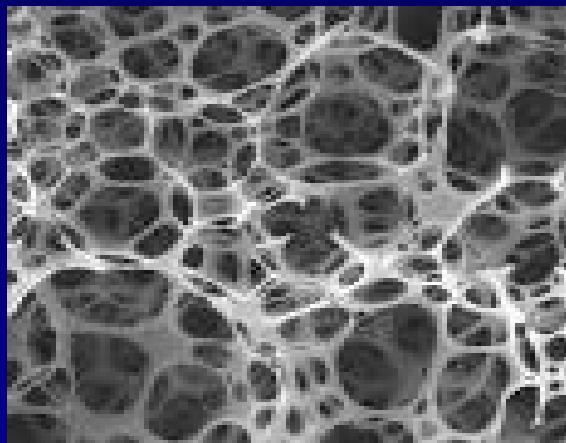


# PATTERN HRCT

La diagnosi di malattia diffusa del polmone usando quadri di HRCT è basata sul riconoscimento di alterazioni specifiche definite in base al corrispettivo anatomico.

# PATTERN HRCT

- Pattern Reticolare



- Pattern Nodulare



- Pattern Alveolare



- Pattern Cistico

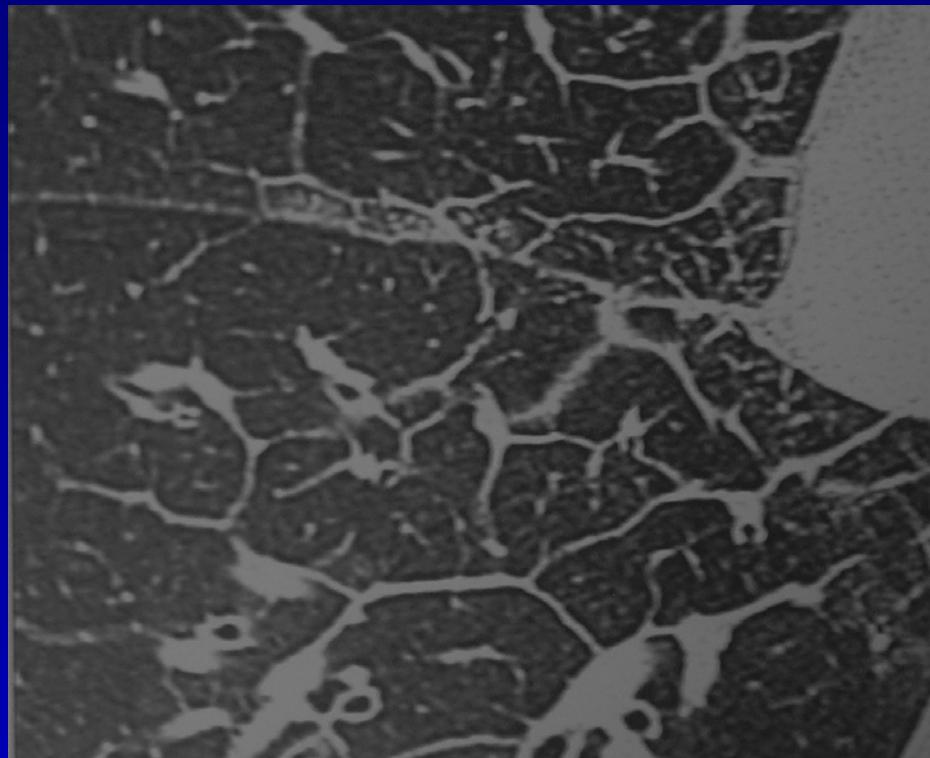
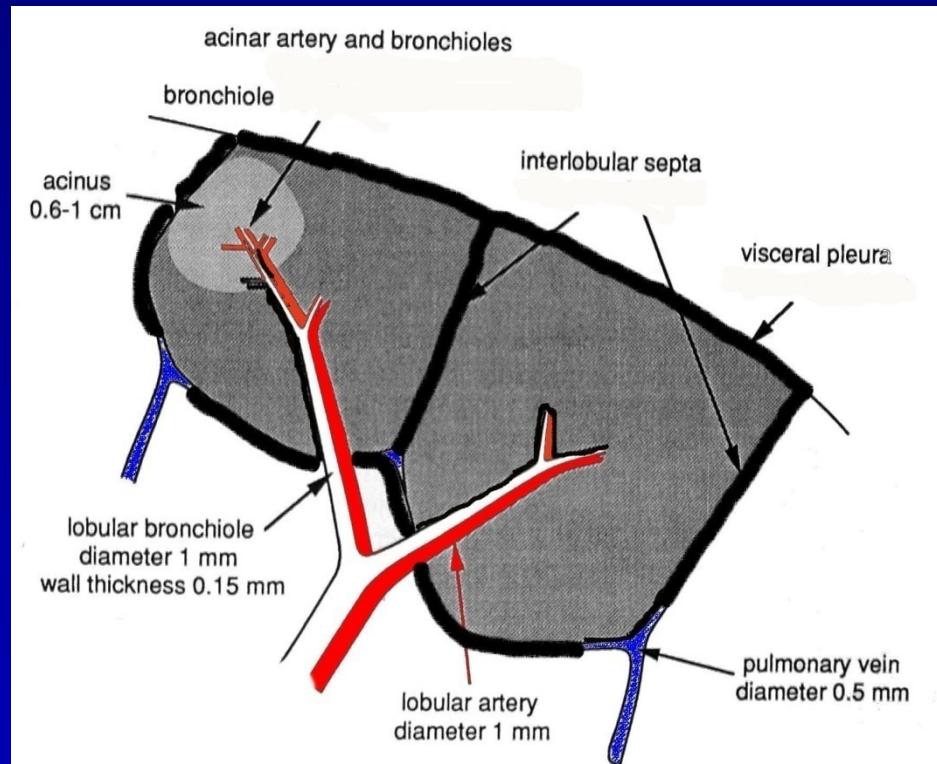


“Pneumopatie Infiltrative Diffuse”

Maffessanti , Dalpiaz

# Pattern Reticolare

Opacità lineari sottili disposte a realizzare un reticolo a maglie più o meno strette causate dall'accumulo di sostanze diverse in base alle quali cambia l'aspetto del reticolo



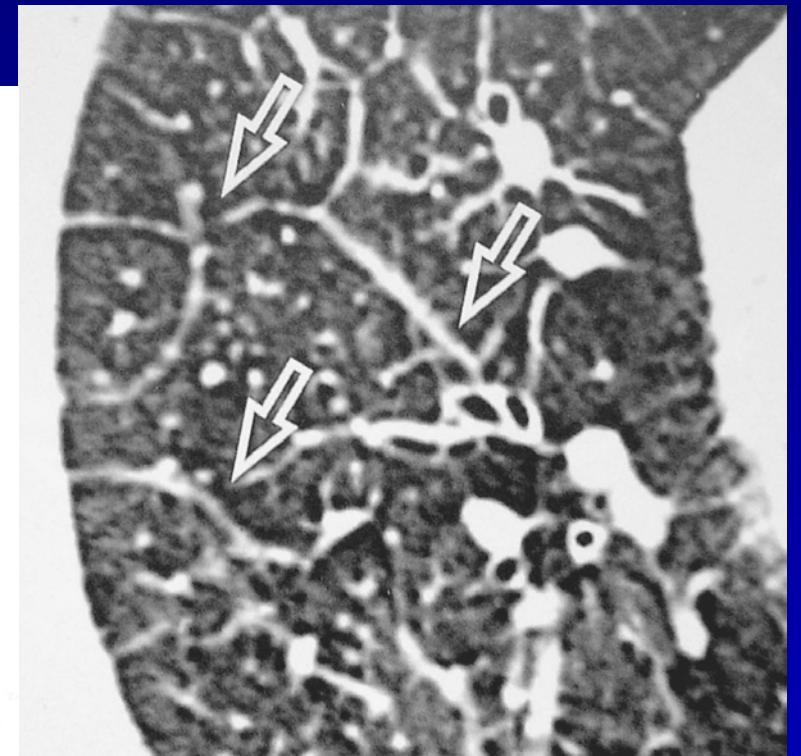
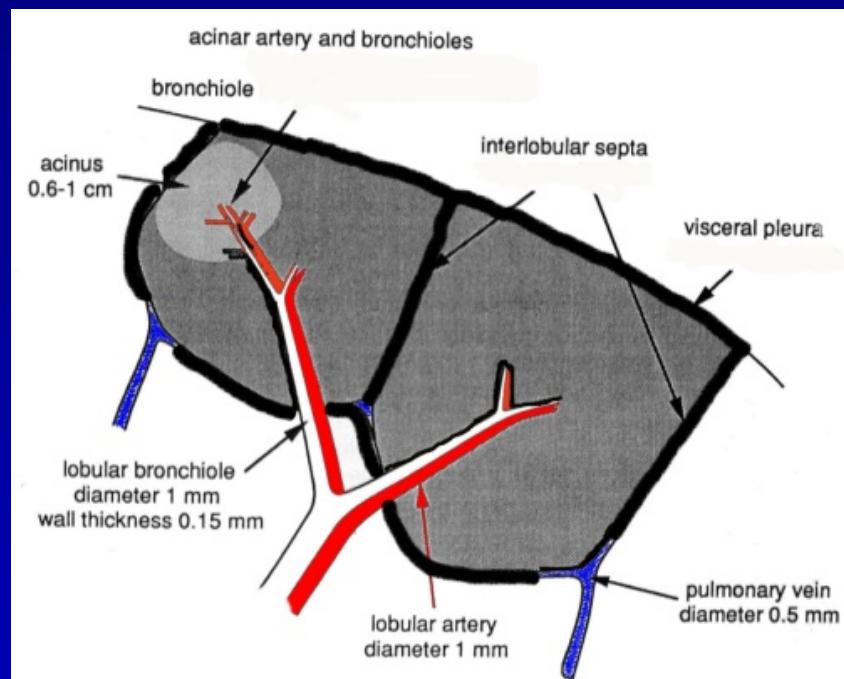
# Reticolazione Liscia

- Ispessimento liscio regolare delle pareti bronchiali
- Ispessimento con visibilità esagerata (tipo strie di Kerley)
- Architettura lobulare conservata

EPA

Linfangite Carcinomatosa

Amiloidosi

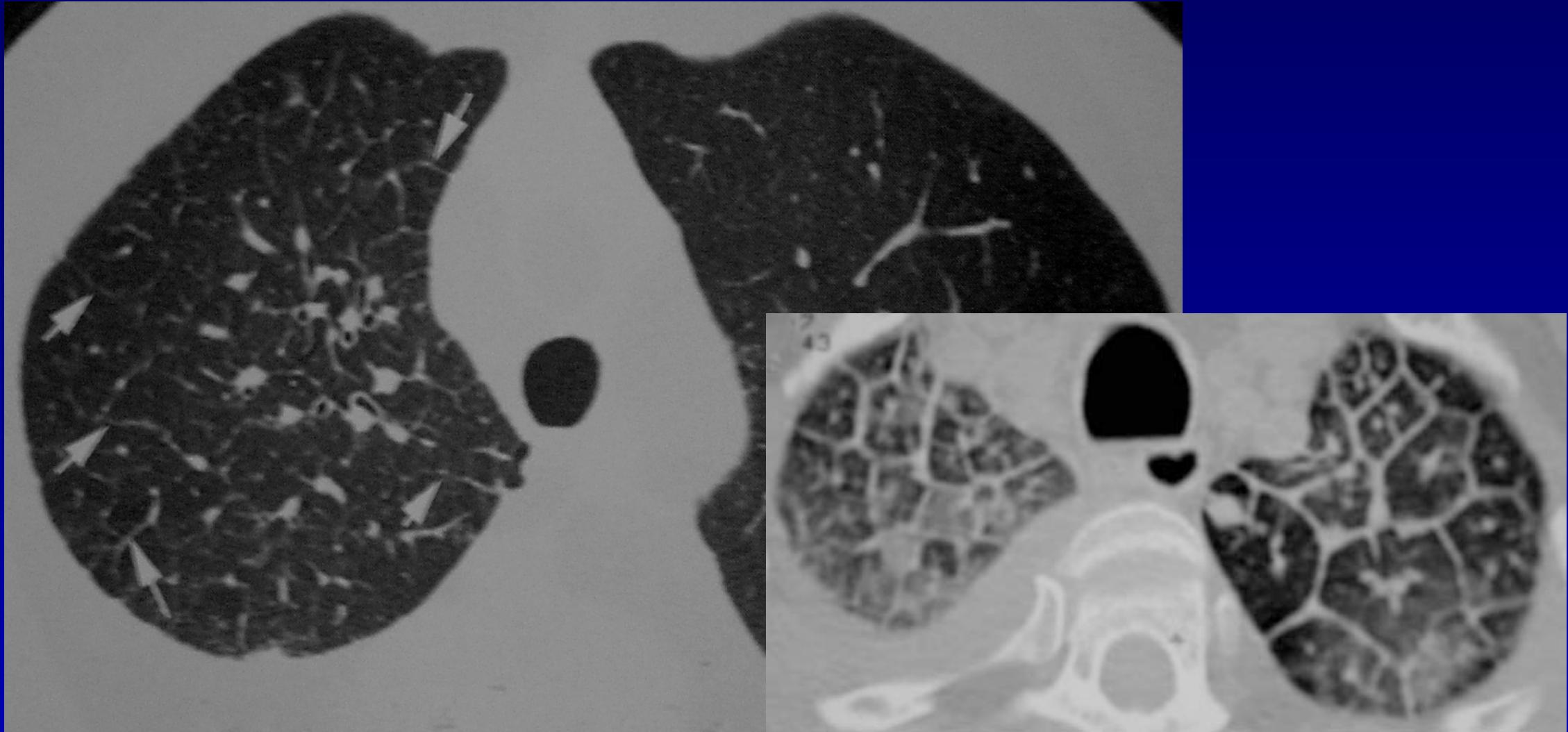




EPA



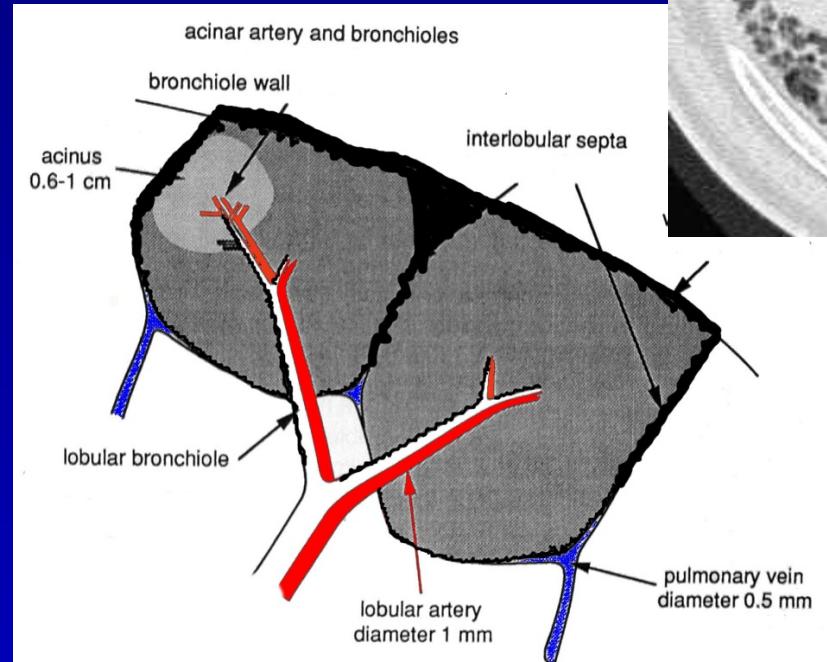
# *Linfangite Carcinomatosa*

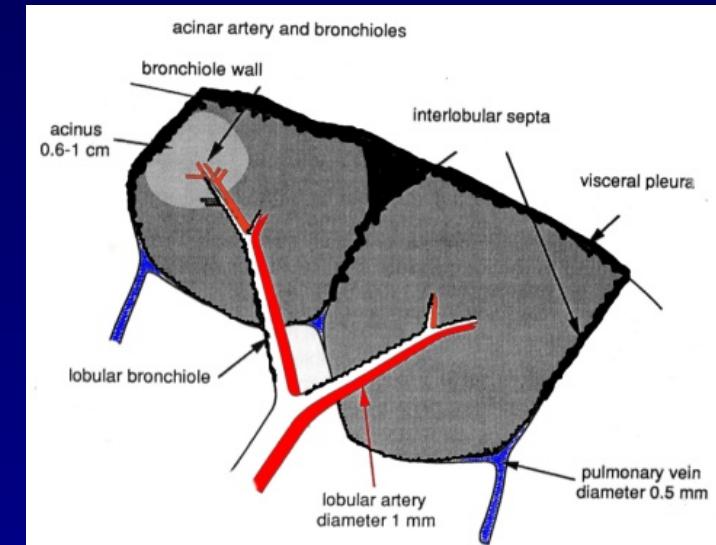
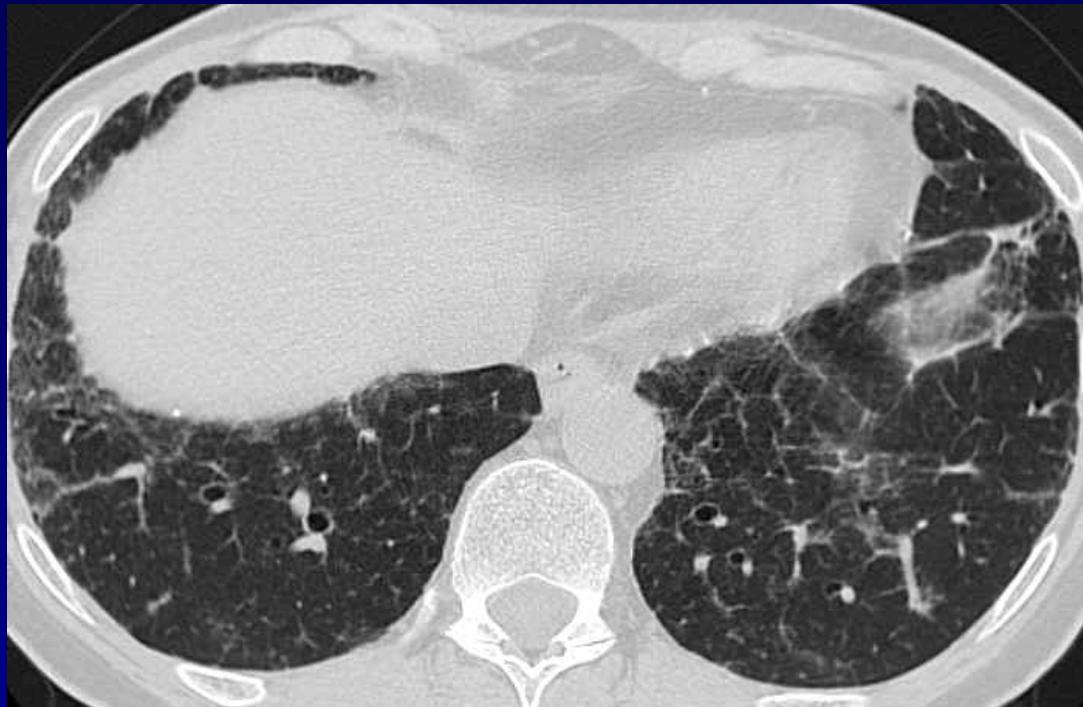


# Reticolazione Irregolare

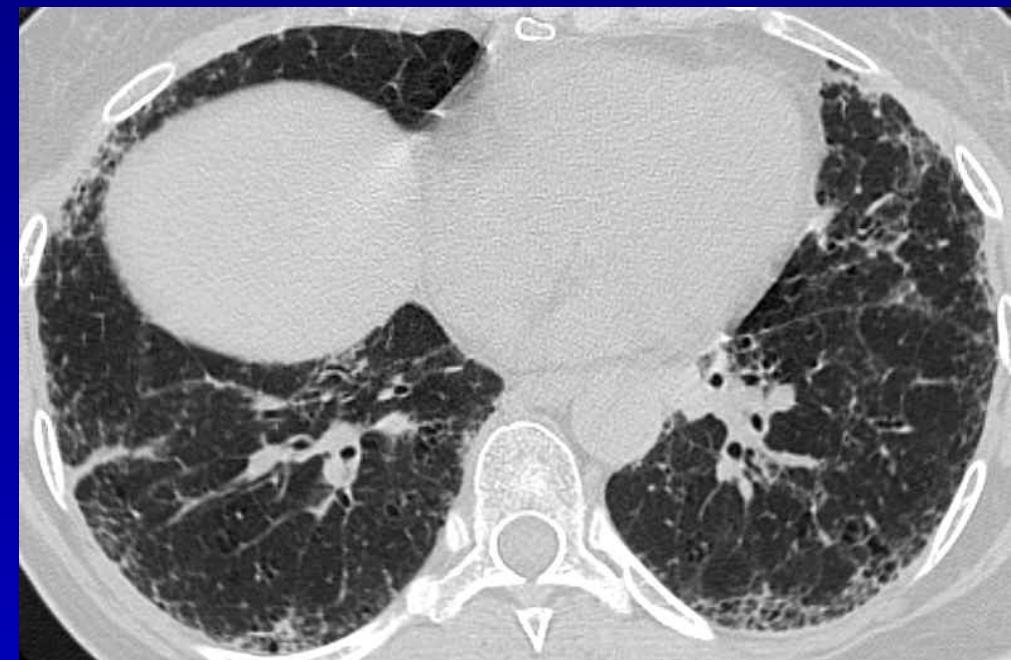
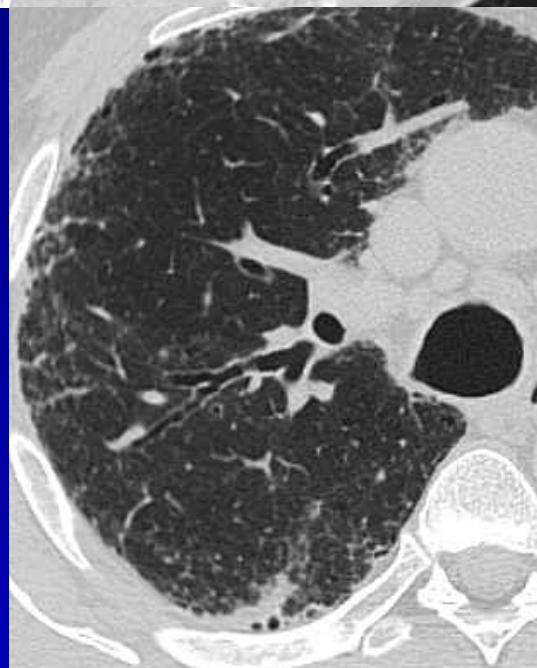
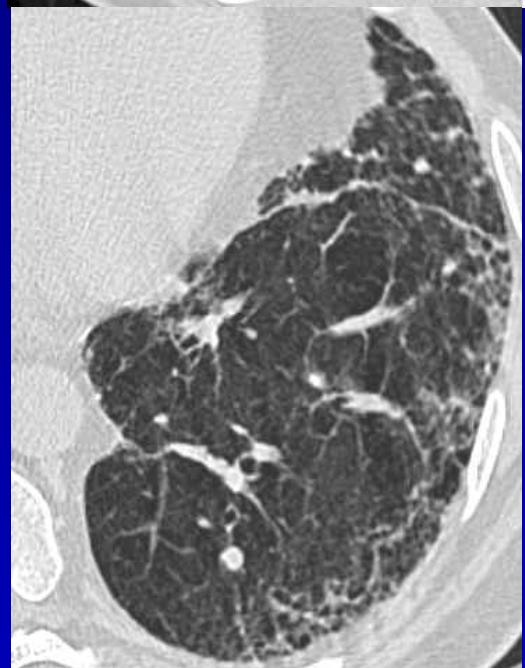
- Ispessimento irregolare dei setti interlobulari e dei fasci peribroncovasali
- Deformazione dell'architettura
- Tipico delle malattie fibrosanti

*Sarcoidosi, Alveolite Allergica Estrinseca ,  
Farmaci Collagenopatie , NSIP,  
Fibrosi Polmonare Idiopatica*





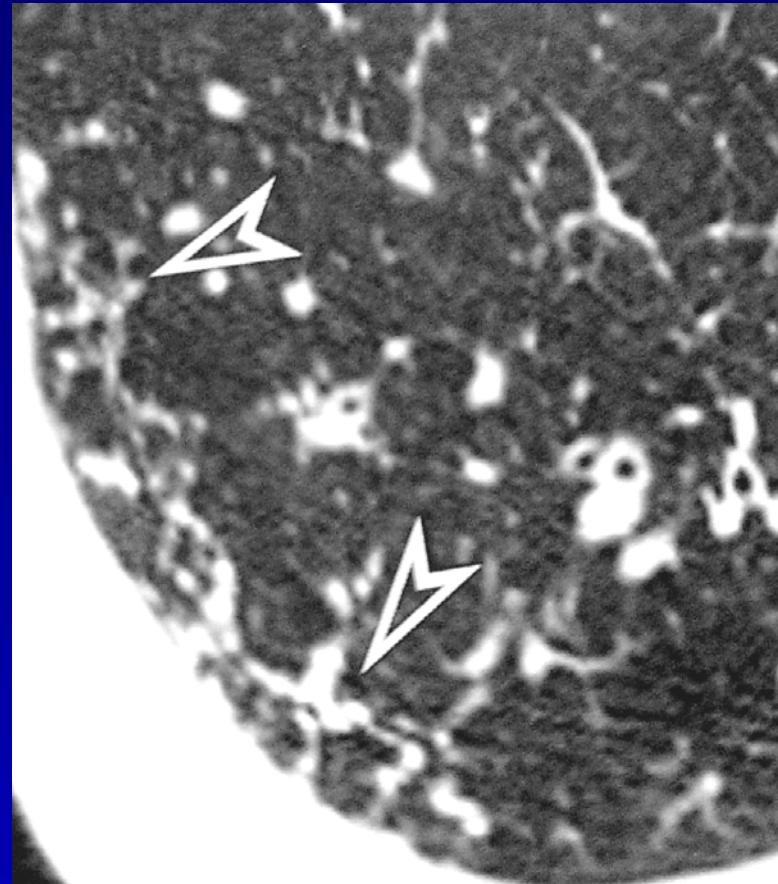
UIP



# Reticolazione Nodulare

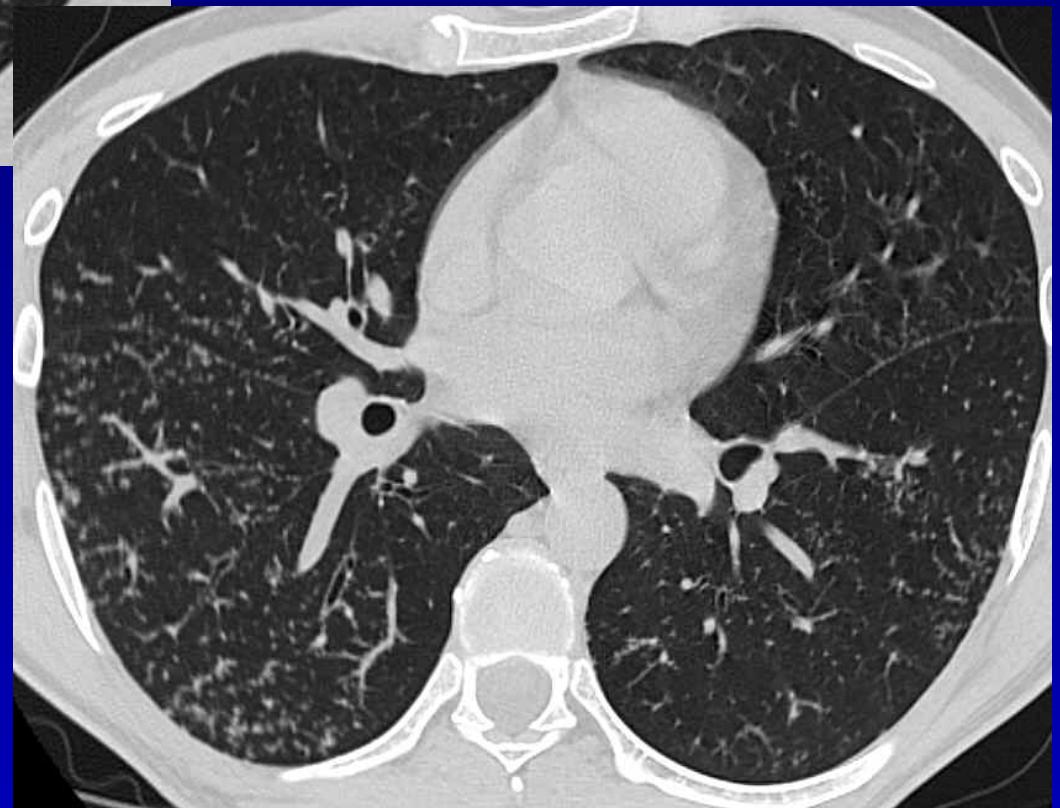
- Setti interlobari ispessiti
- Ispessimento moniliforme “Beaded appearance”
- “ Dotlike opacatile”

*Lymphangitic  
Lymphoma  
Sarcoidosi  
Silicosi  
LIP  
Amiloidosi*



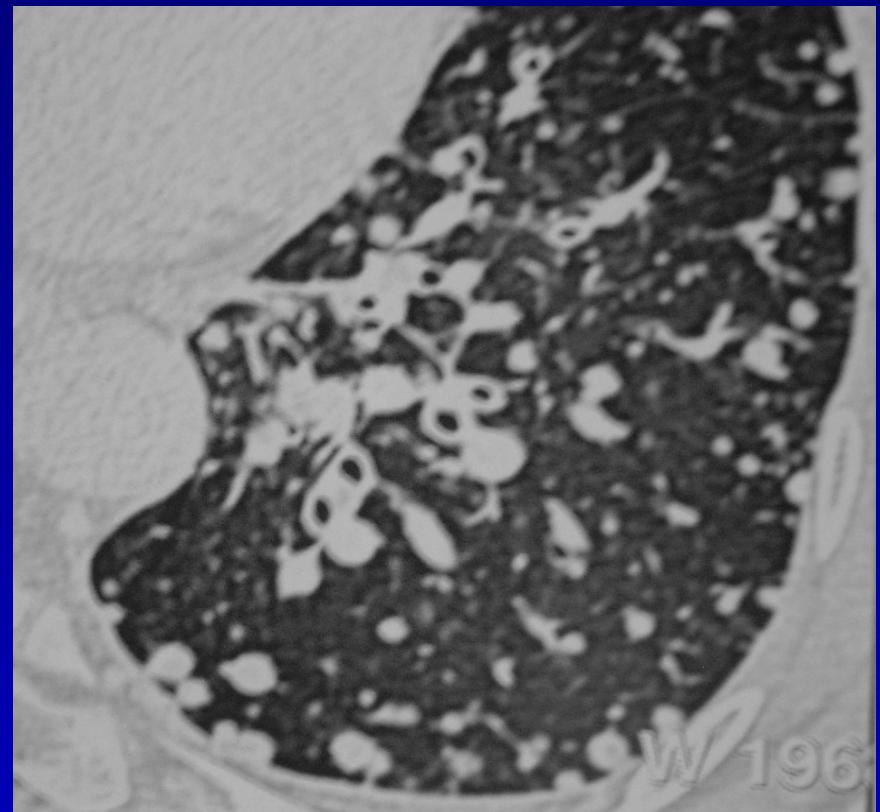
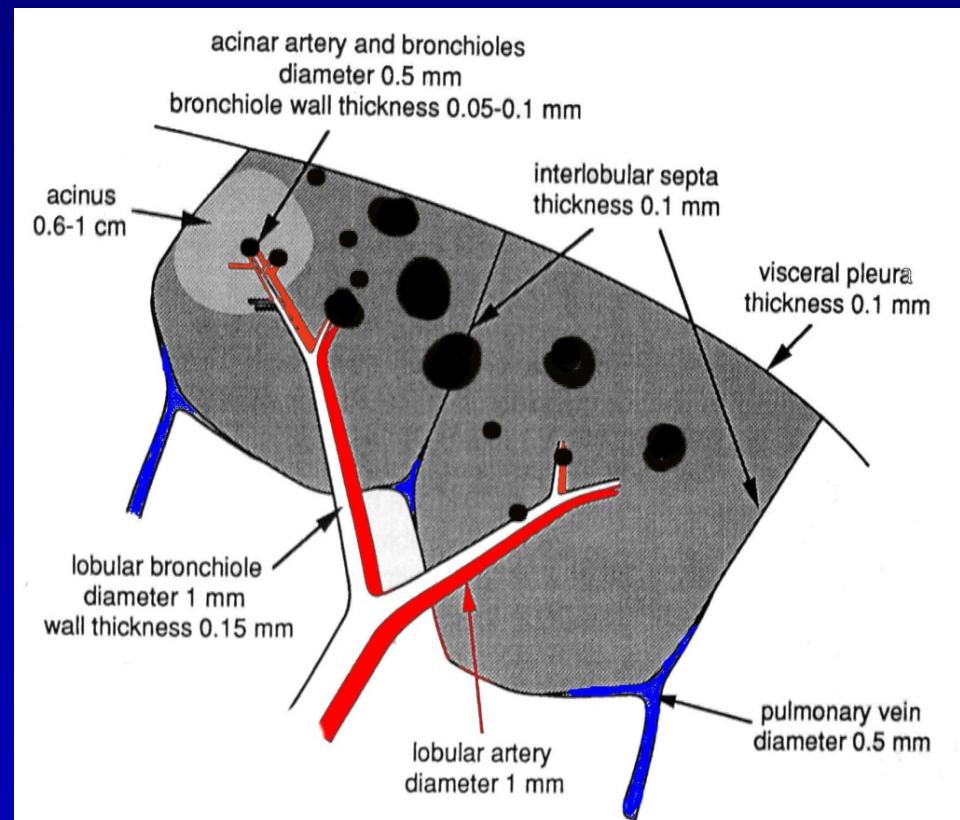


*Sarcoidosi*



# Pattern Nodulare

Alterazioni micronodulari con diametro < ai 3mm e macronoduli con diametro tra 3mm e 1cm che assumono posizione definita nel contesto del lobulo secondario e rispetto alle limitanti pleuriche

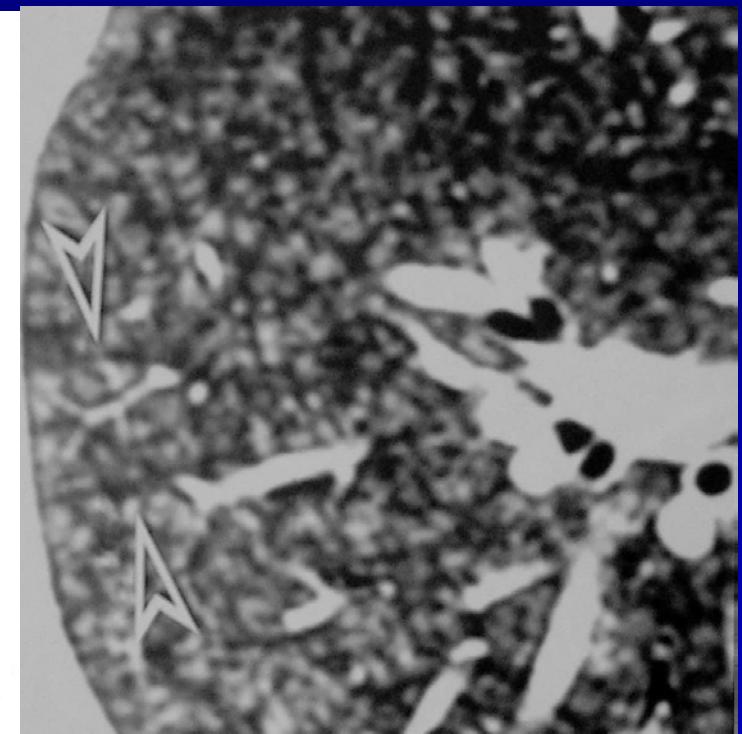
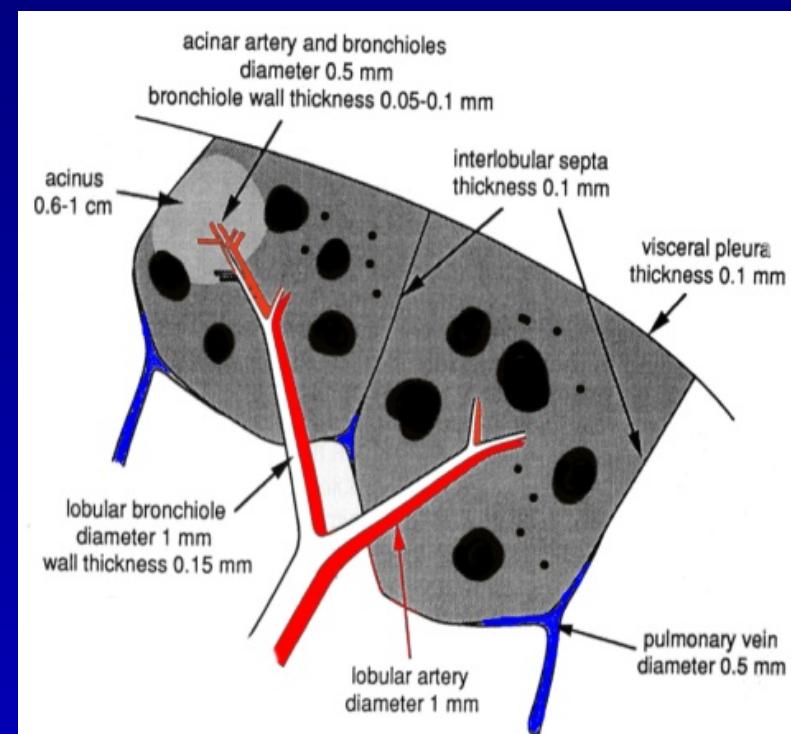


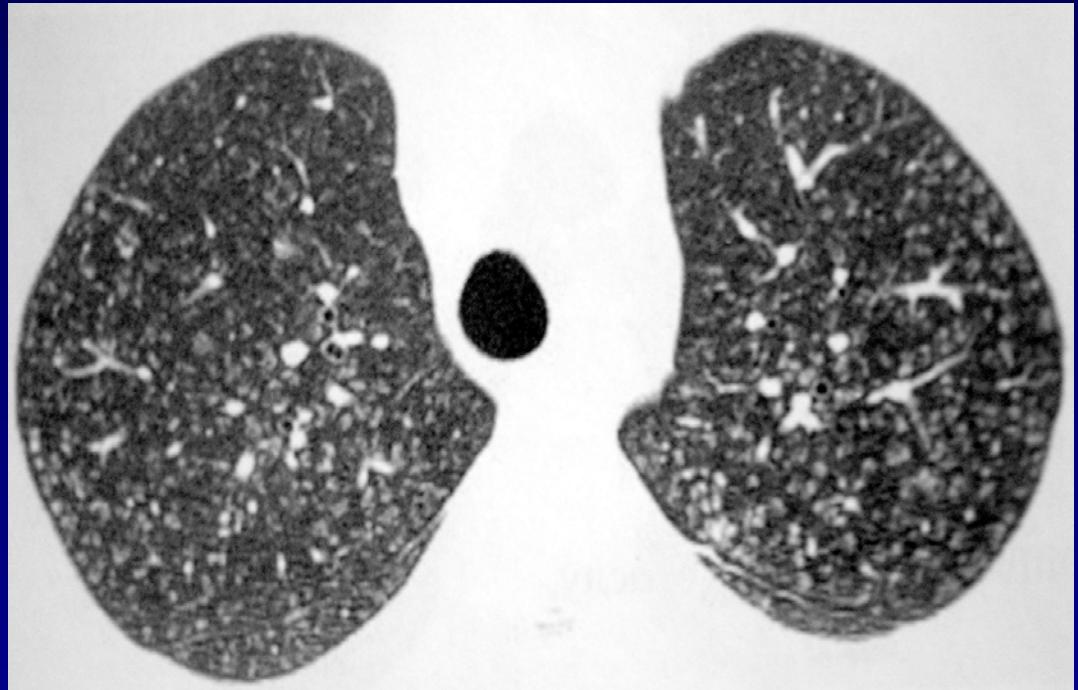
# Noduli Centrolobulari

Si arrestano a qualche distanza dalle limitanti pleuriche e dai setti interlobulari

Tipico delle malattie che originano dai e nei bronchioli

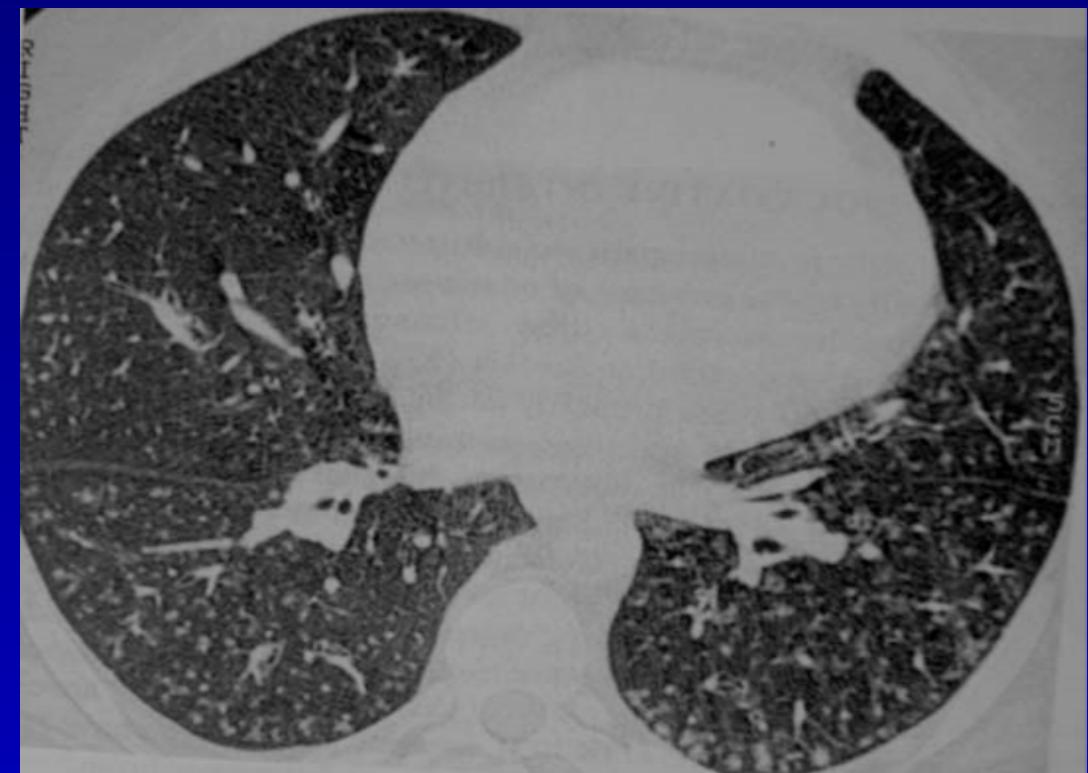
- *Istiocitosi X iniziale*
- *Polmonite Linfocitaria Interstiziale*
- *Alveolite Allergica Estrinseca*
- *RB-RBILD*





*RB\_RBILD*

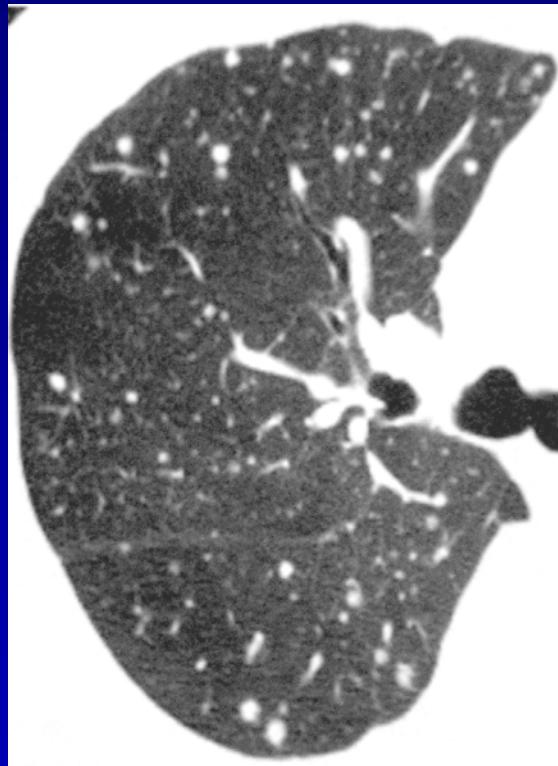
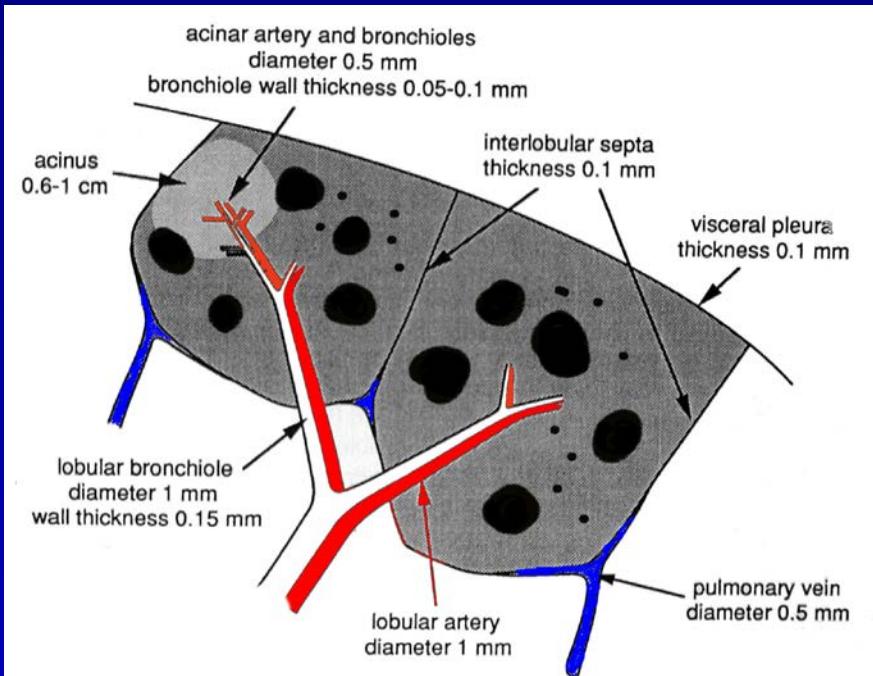
*Istiocitosi X*



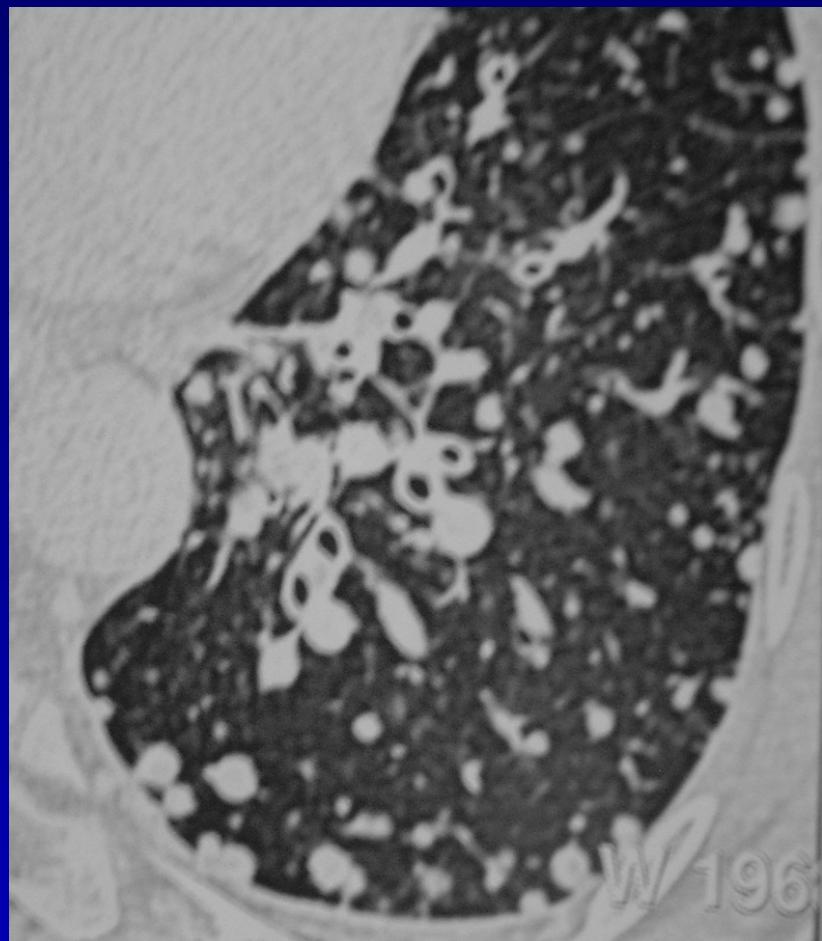
# Noduli Indifferenti alla Pleura

Noduli omogeneamente distribuiti nel contesto del lobulo secondario anche a contatto con i vasi “Feeding vessel sign” e a volte vicini alla pleura

*Silicosi ,  
TBC,  
Metastasi*



## *Metastasi*



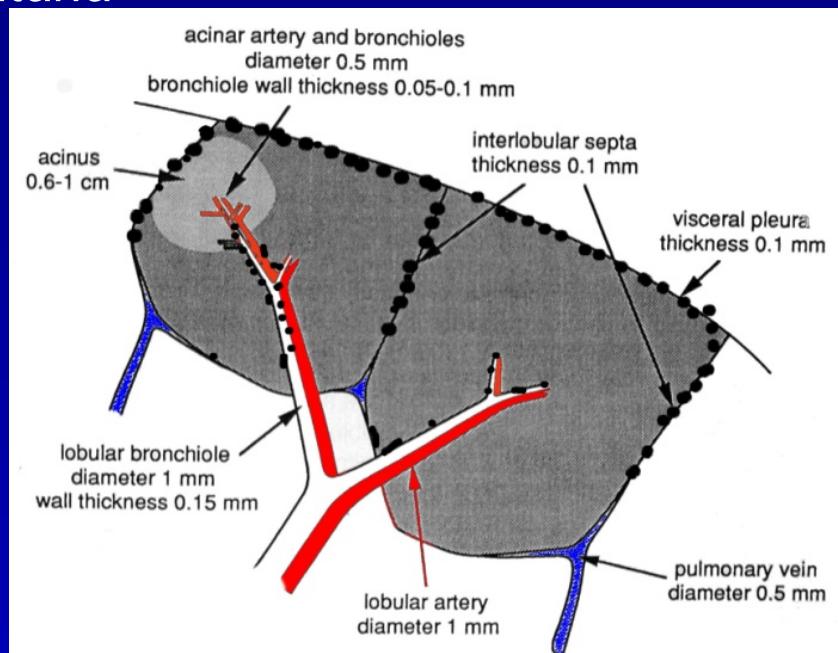
# Noduli Perilinfatici

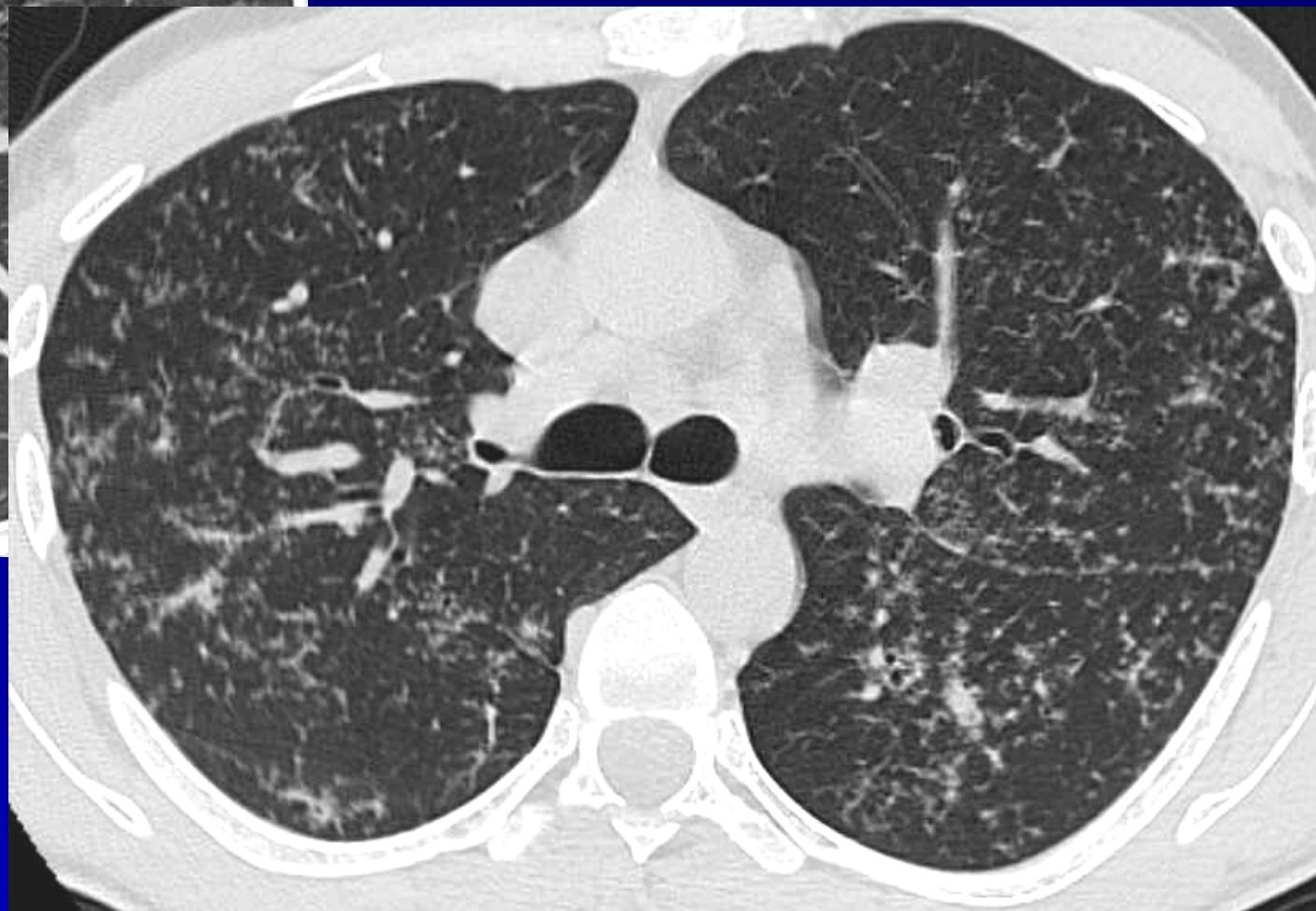
Noduli situati a livello dell'interstizio perlobolare, subpleurico lungo le scissure .

Tipico di malattie che diffondono per via linfatica

*Sarcoidosi Granulomatosa,*

*Polmonite Intestiziale Linfocitaria*





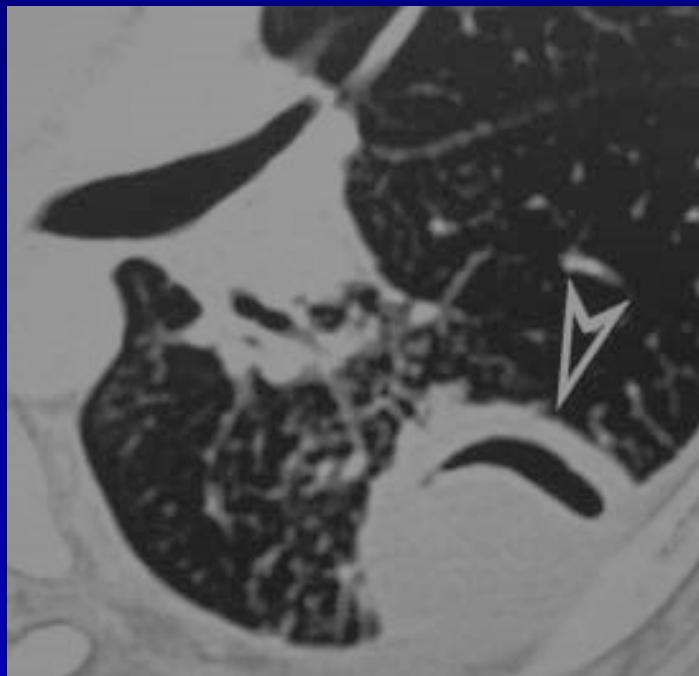
# Grandi Opacità'

Opacità rotondeggianti di diametro variabile da 1cm a più centimetri talvolta associate ad alterazioni diffuse di piccole dimensioni insieme alle quali contribuiscono a dare specificità della malattia.

*Aspegillo*

*-Air crescent sign*

*-Fungus ball*



# BAC

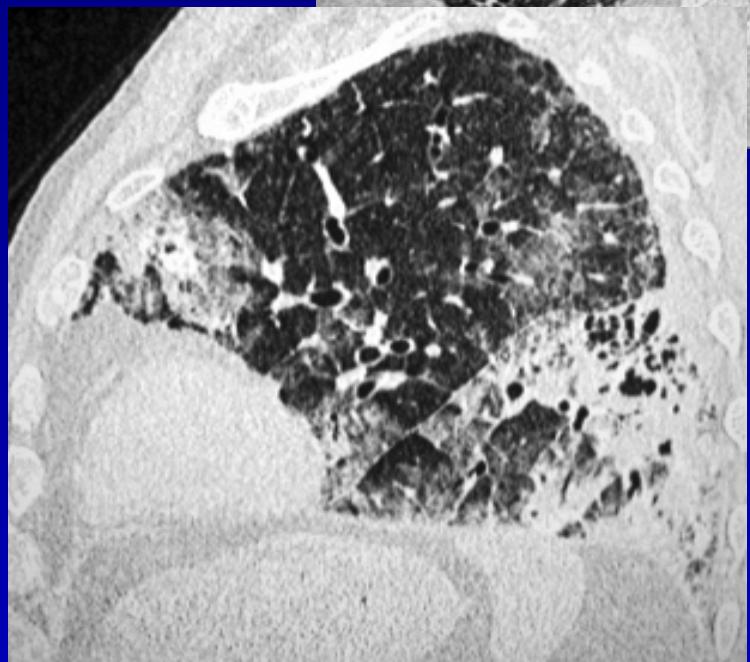
Opacità numerose e  
dimensioni variabili

Margini mal definiti

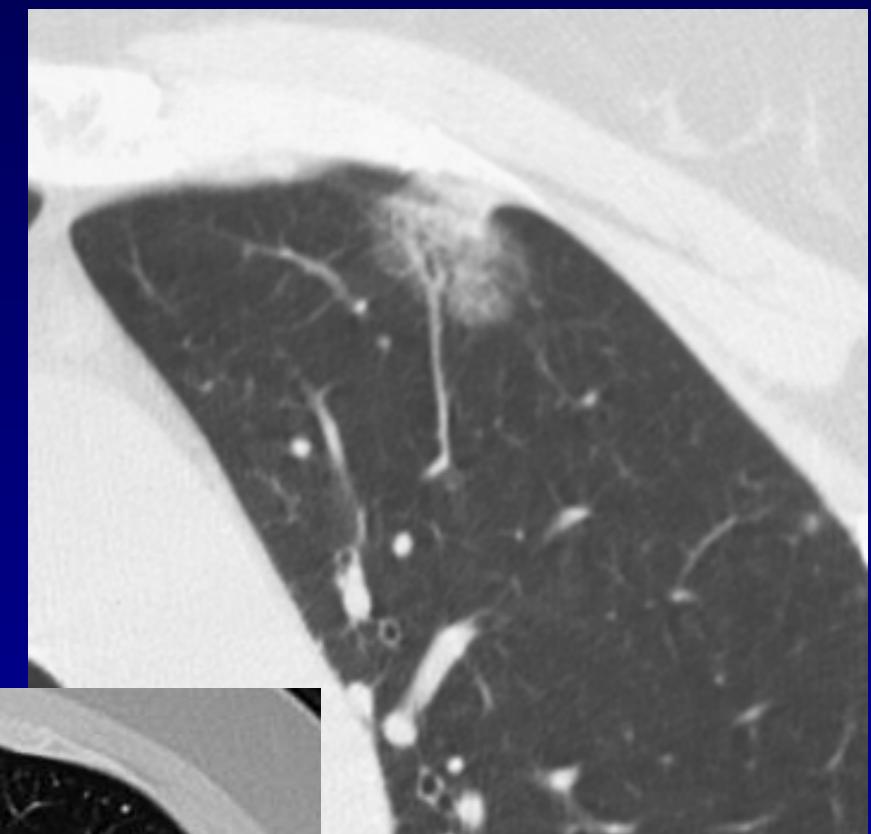
**“Halo sign”**





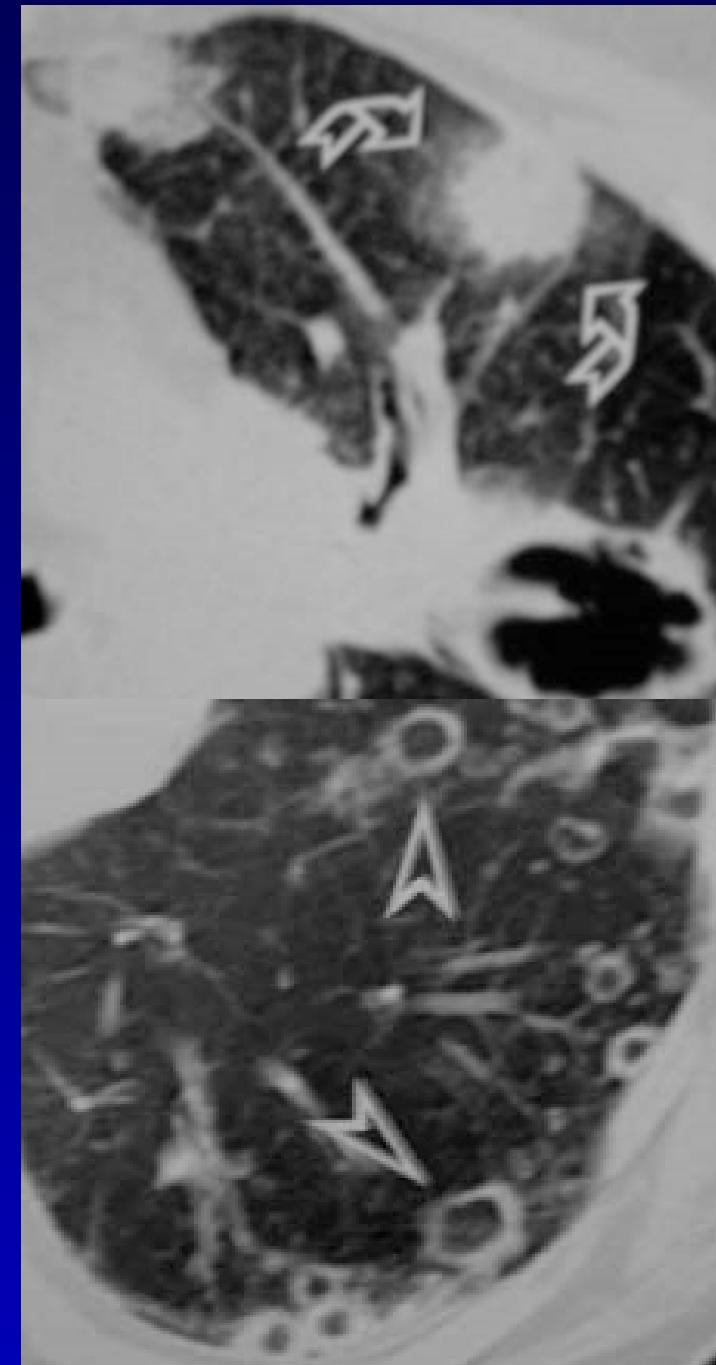


Variante mucinosa insorto su fibrosi polmonare (UIP)



## *Metastasi*

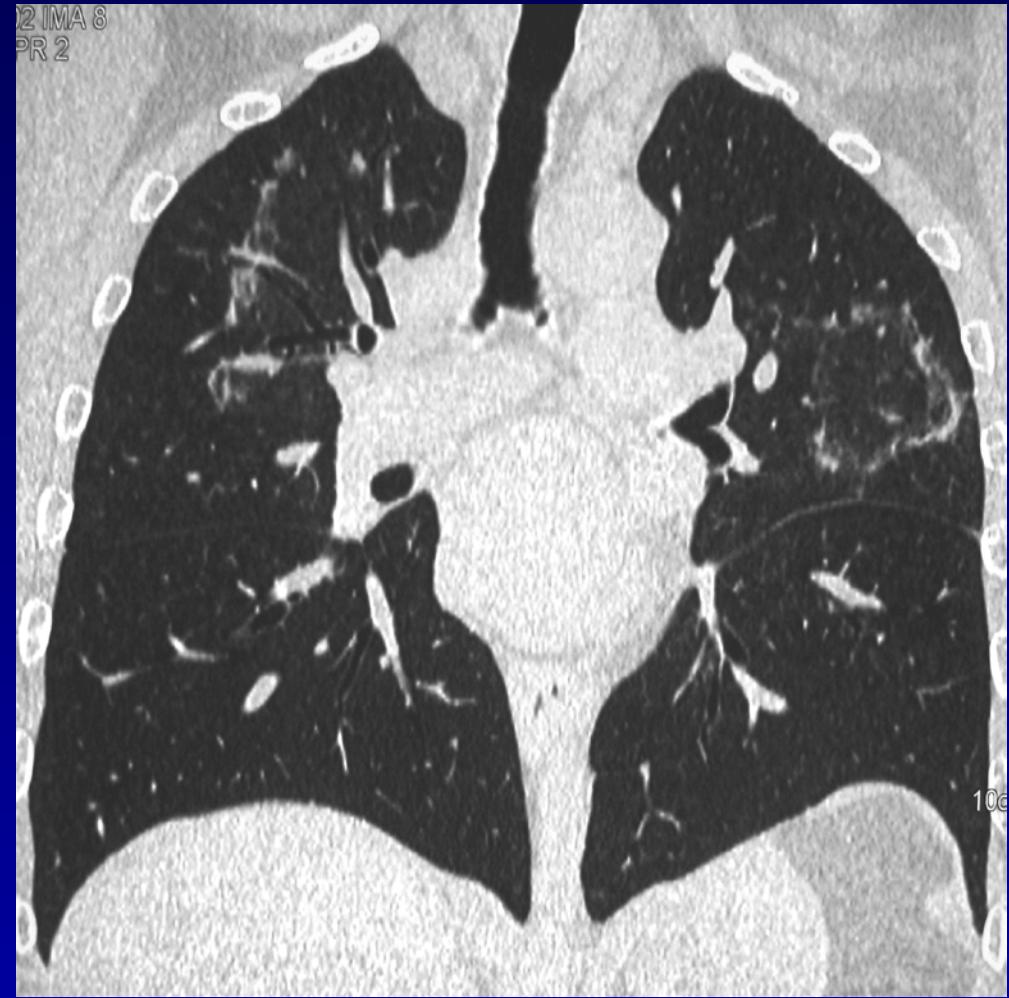
- Variabilità numerica e dimensionale
- Contorni netti regolari
- Contorni irregolari con “**Halo sign**”
- Cavitazioni
- Calcificazioni



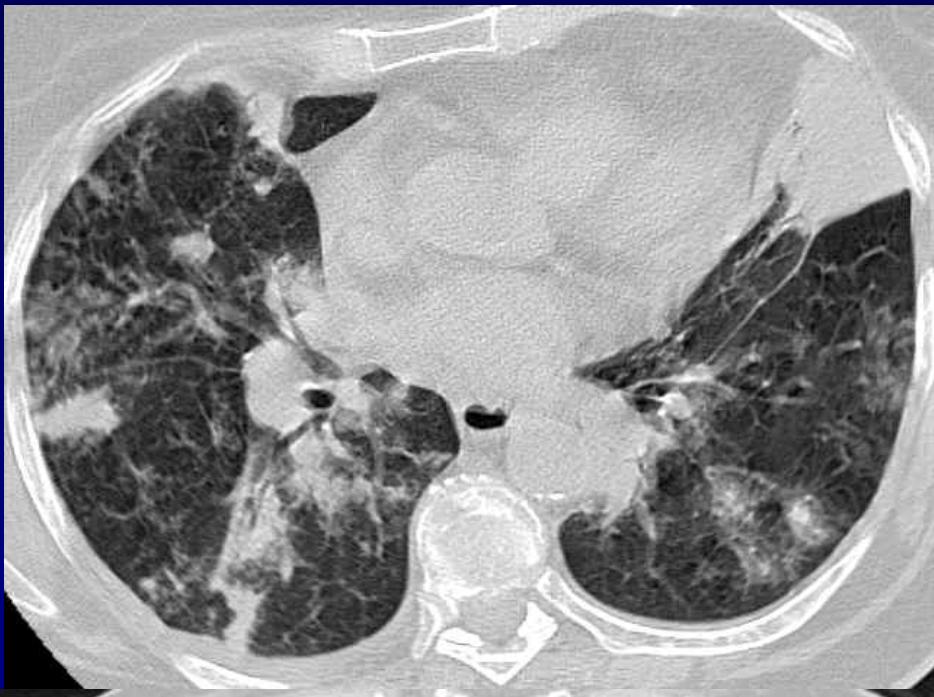
## Polmonite Organizzativa

- Opacità multiple
- Margini netti o sfumati
- Broncogramma aereo interno
- Ground Glass interno  
**“Atoll sign”**



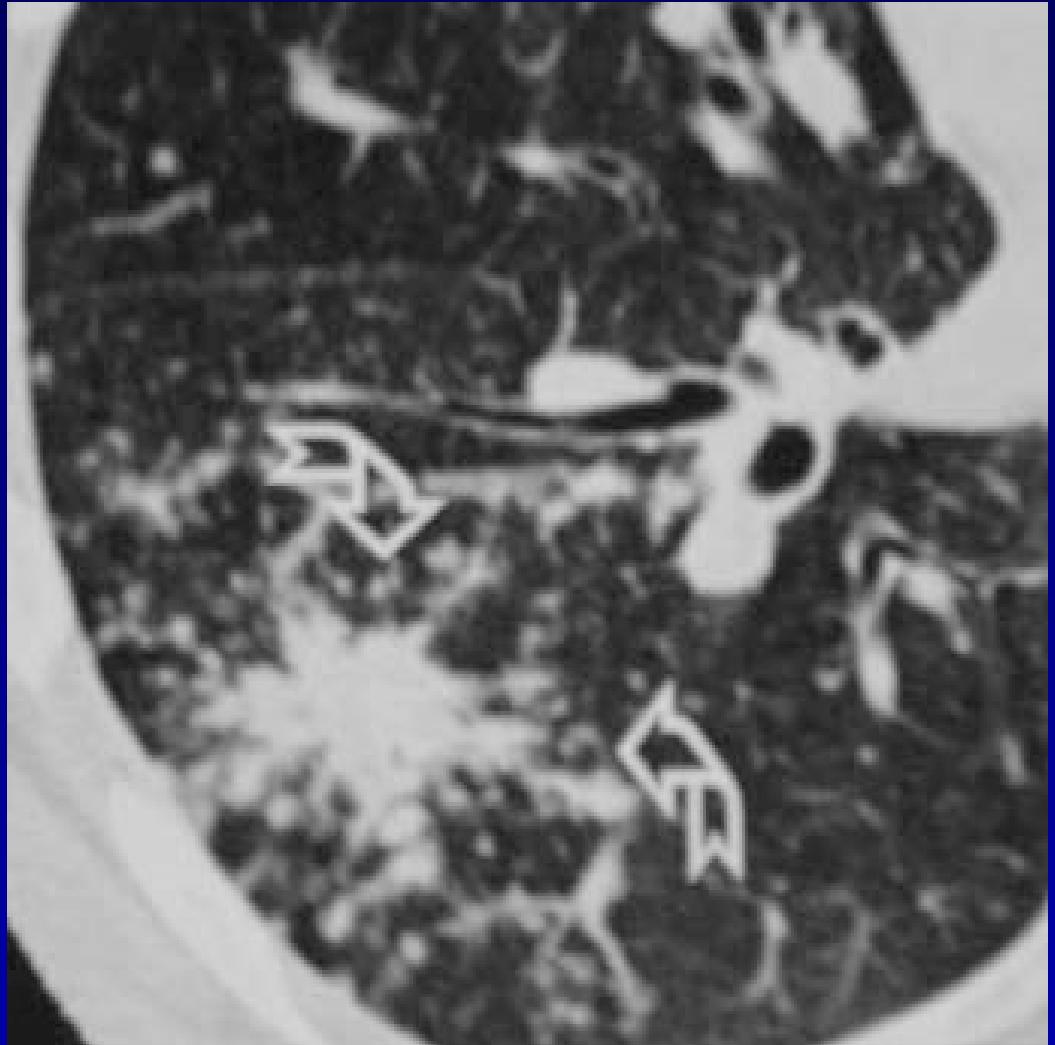


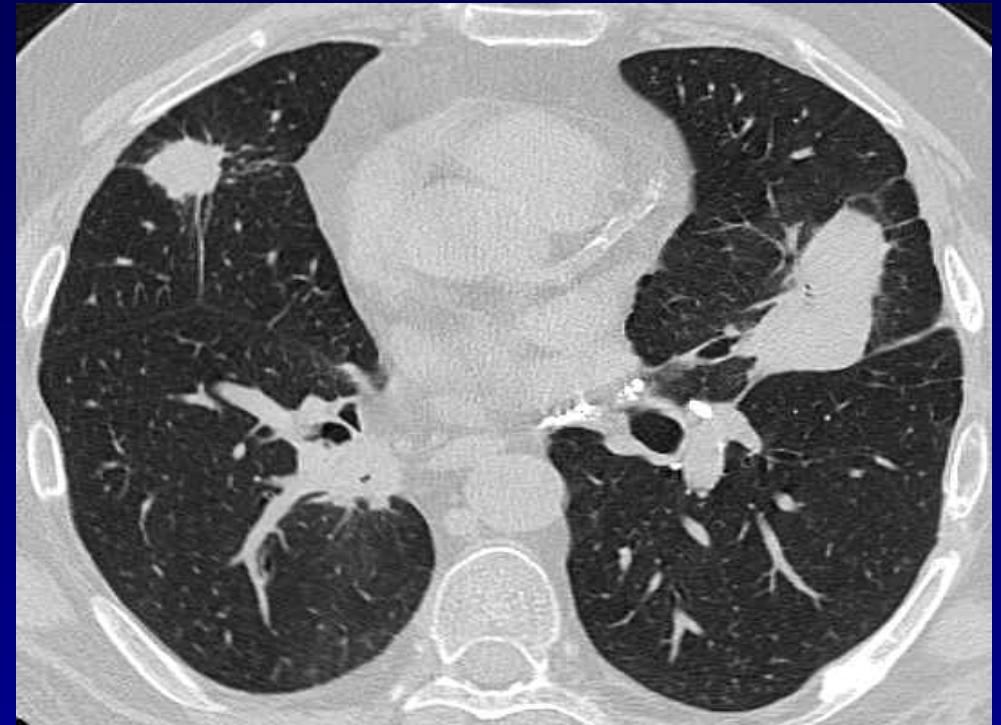
*POLMONITE ORGANIZZATIVA*



## Sarcoidosi

- Singole o multiple
- Margini irregolari
- Micronoduli satelliti
- **“Galaxy sign”**
- Micronoduli avidi di pleura
- Adenopatie

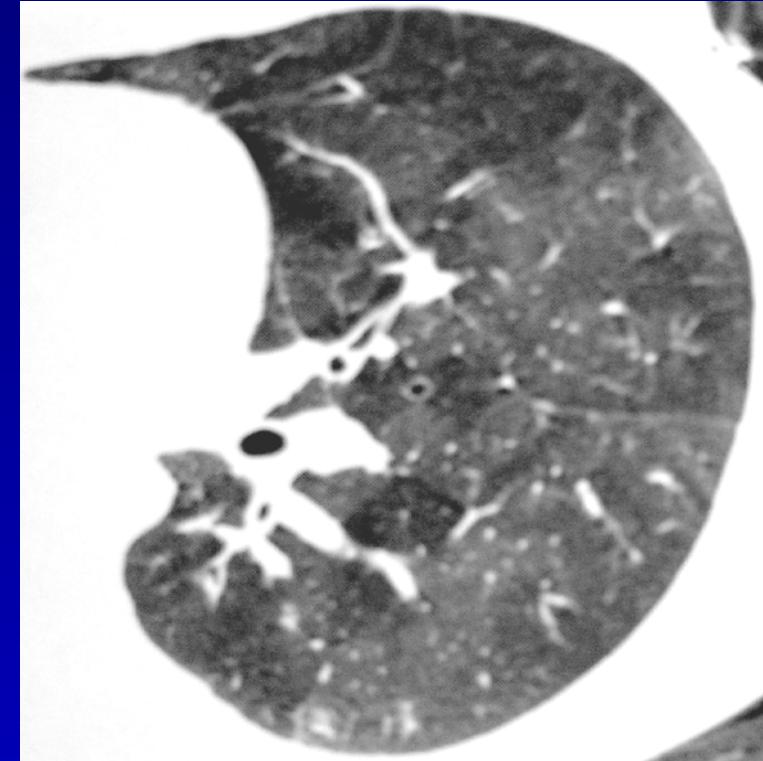
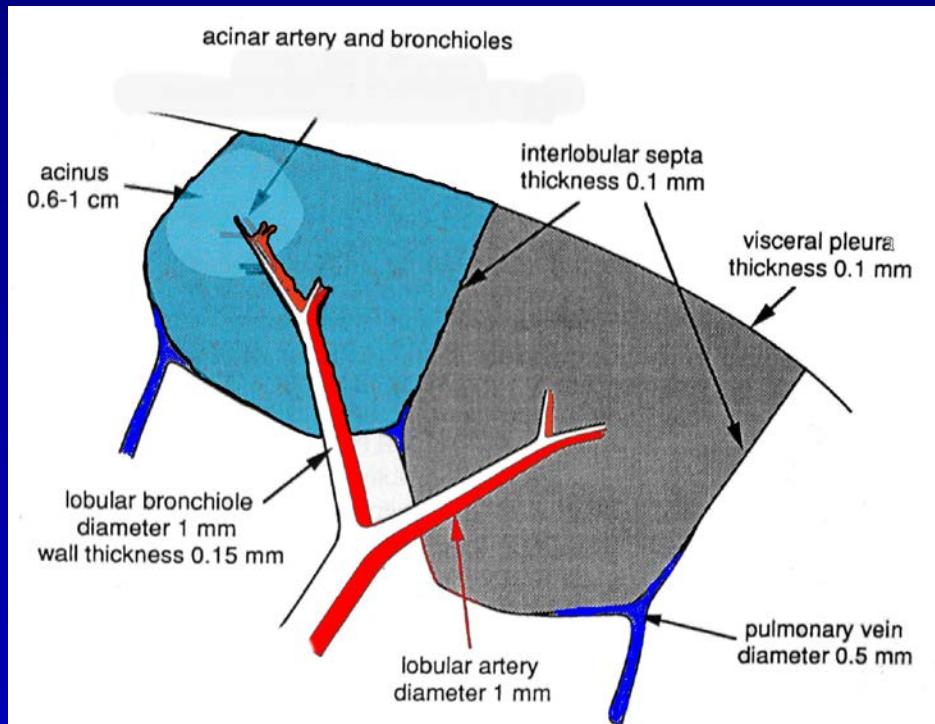




# Pattern Alveolare

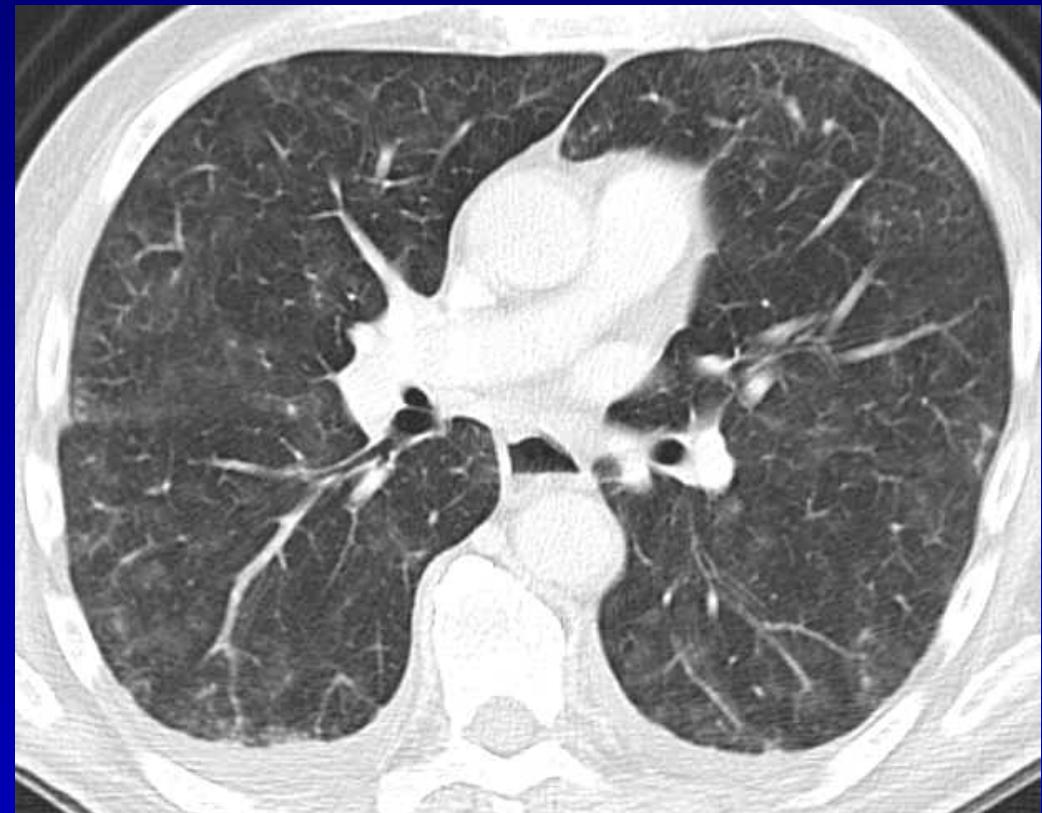
Opacità date dalla sostituzione dell'aria del polmone con altro materiale diverso

- parziale GROUND GLASS - CRAZY PAVING
- completo ADDENSAMENTO





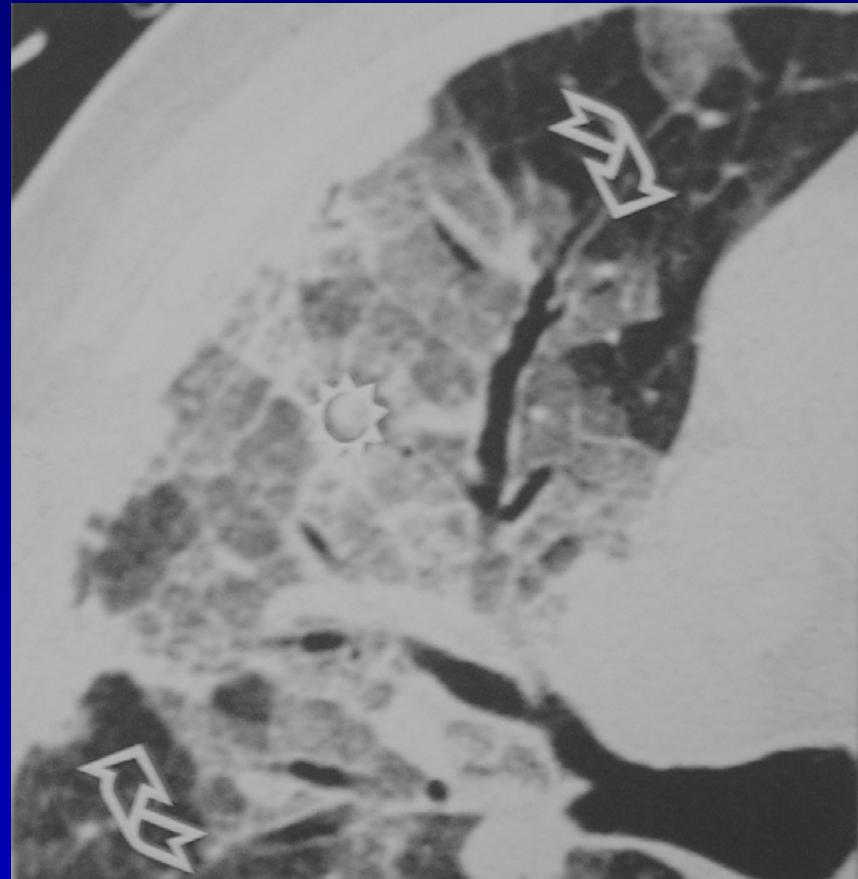
*Alveolite Allergica  
Estrinseca*

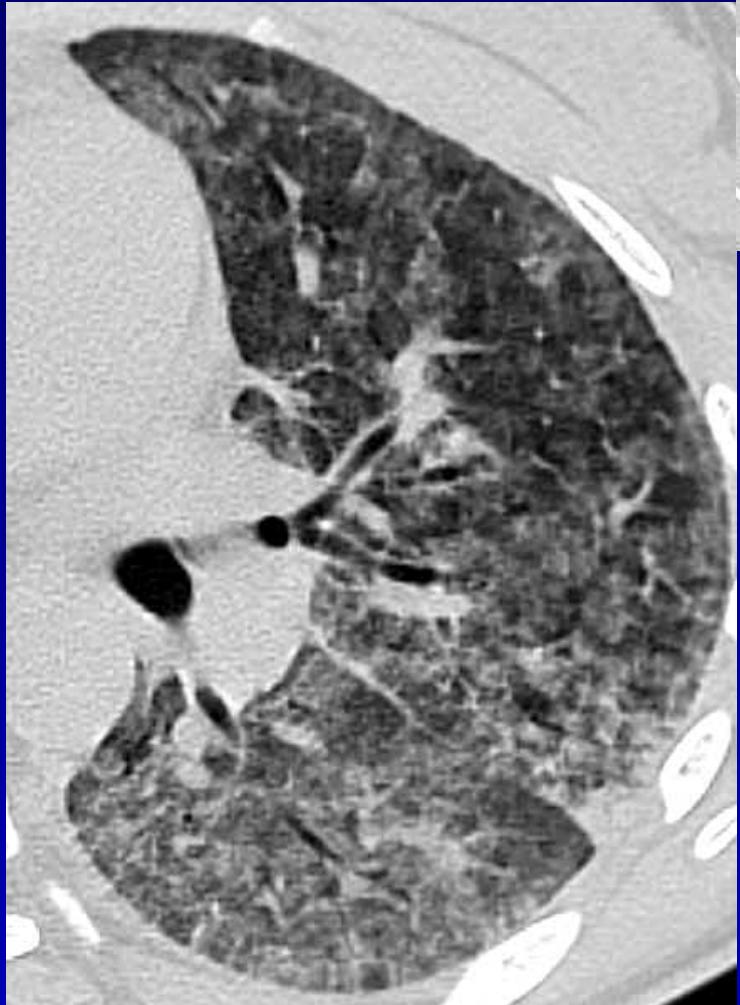


# Pattern Addensativo Misto Acuto

Pattern addensativo è bilaterale esteso e puo' cambiare per sede, forma e distribuzione nel giro di poche ore o giorni

- *PCP,*
- *Vasculite Emorragica,*
- *Acute Interstizial Pneumonia ,*
- *Alveolite Allergica Estrinseca ,*
- *ARDS, EPA alveolare*

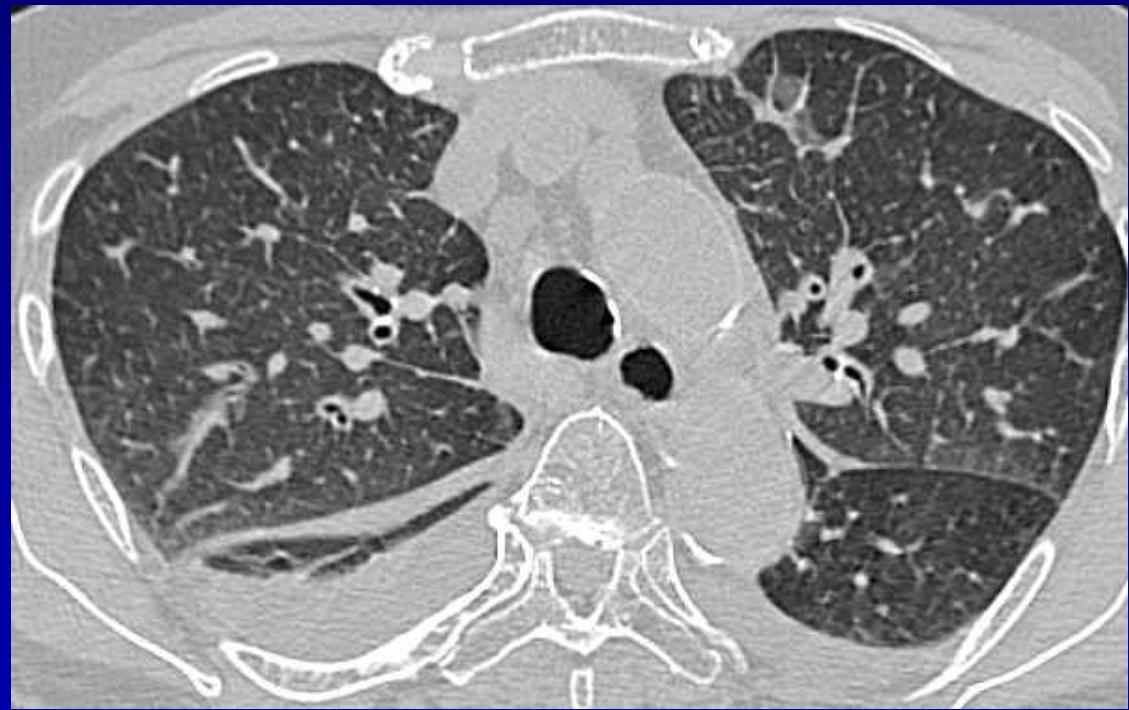
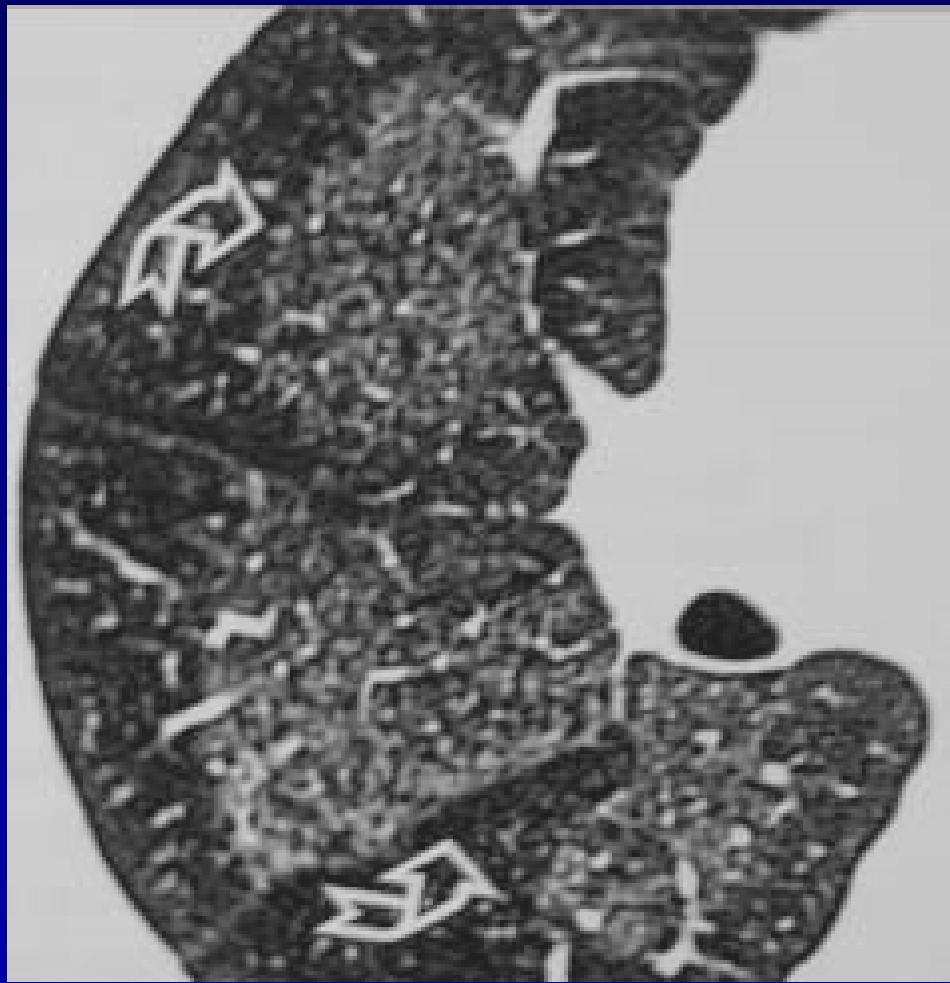




*PJP*



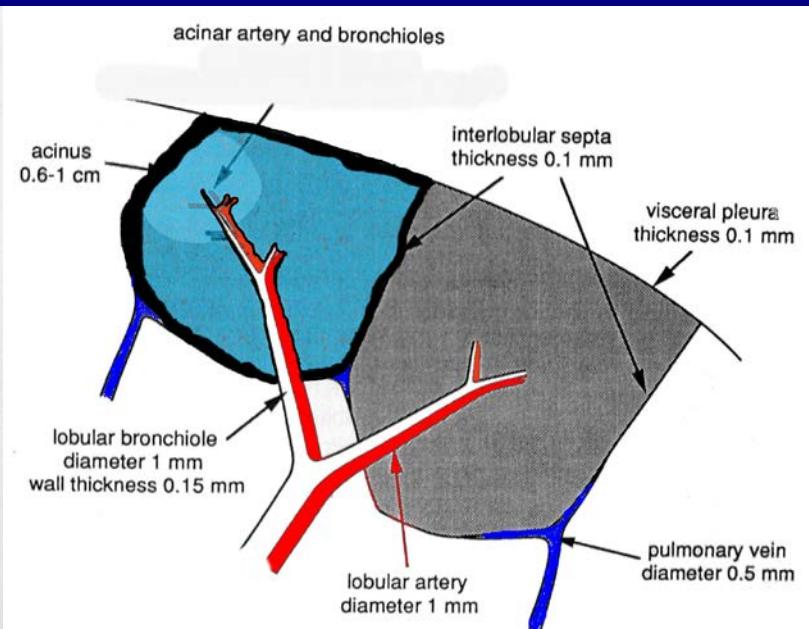
*Epa alveolare*



# Pattern Addensativo Misto Cronico

GG ,addensamenti , frequente il Crazy Paving con interessamento dei bronchi e bronchioli con ectasie e riempimento alveolare .

Localizzate a chiazze che evolvono lentamente in settimane o mesi.



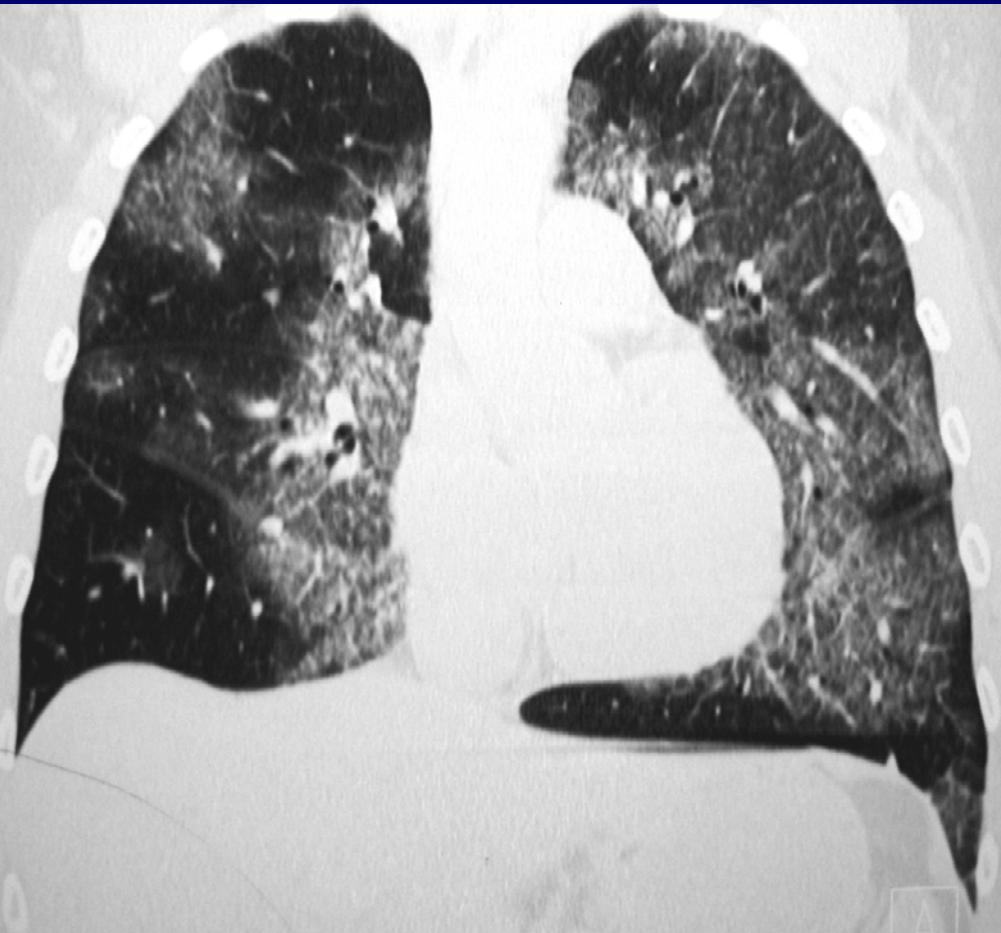
*Proteinosi Alveolare,*

- *BAC,*
- *DIP,*
- *MALTOIMA*

*PO, Farmaci*

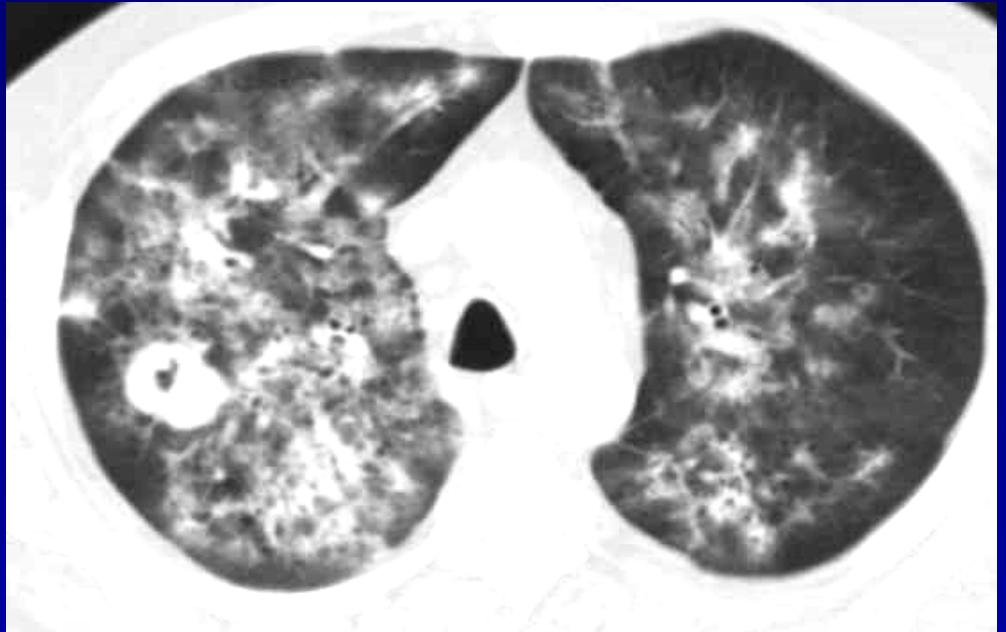


## *Proteinosi alveolare*

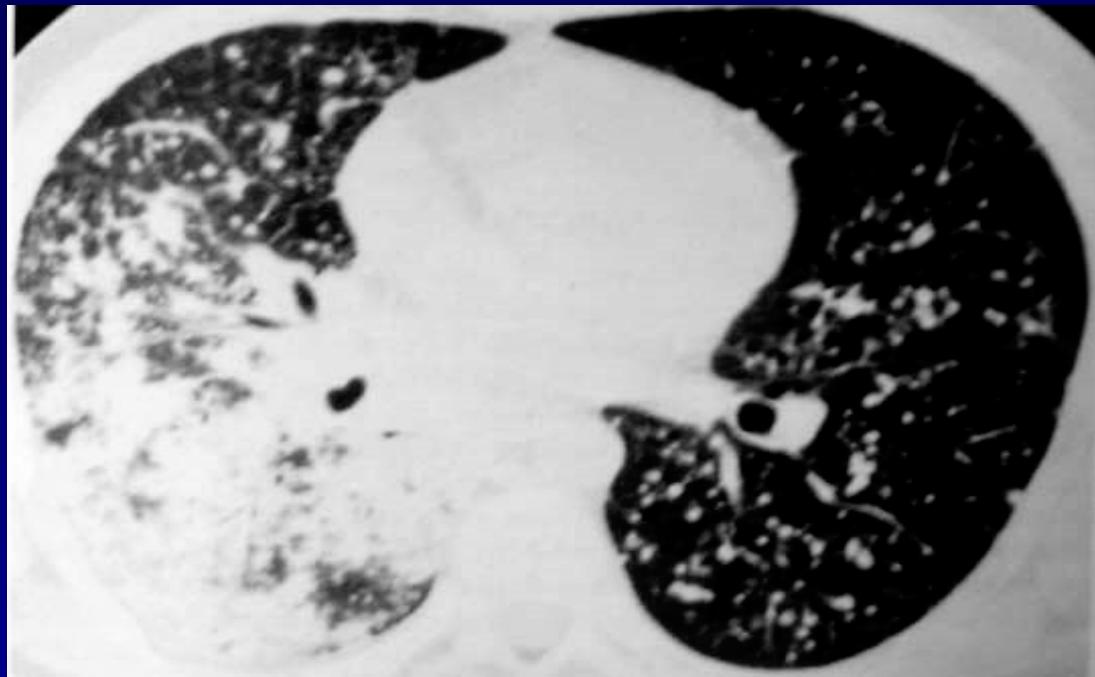
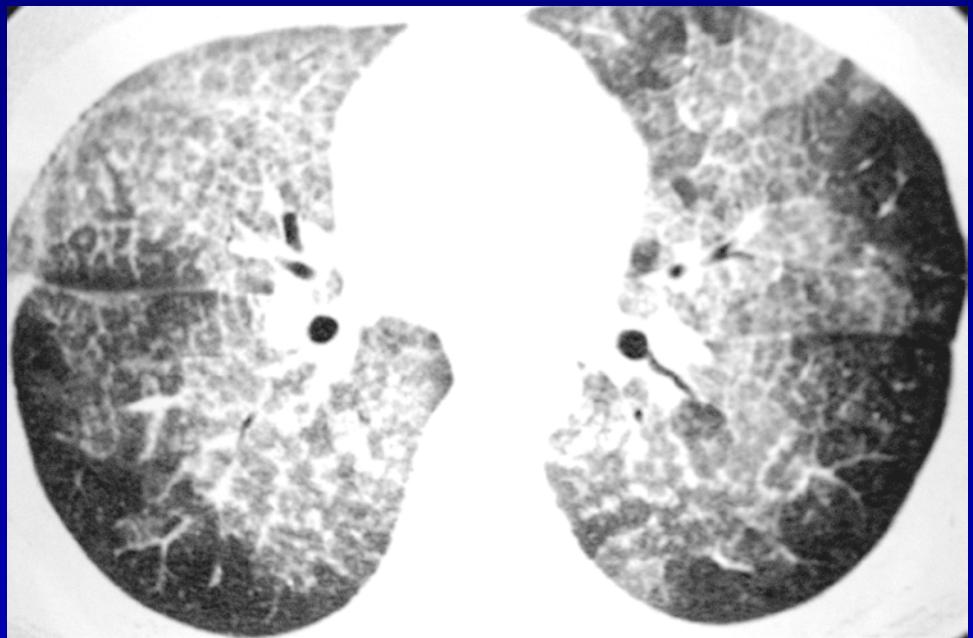


*Per gentile concessione del  
Dr Sverzallati*

*Polmomite da  
amiodarone*



*BAC*

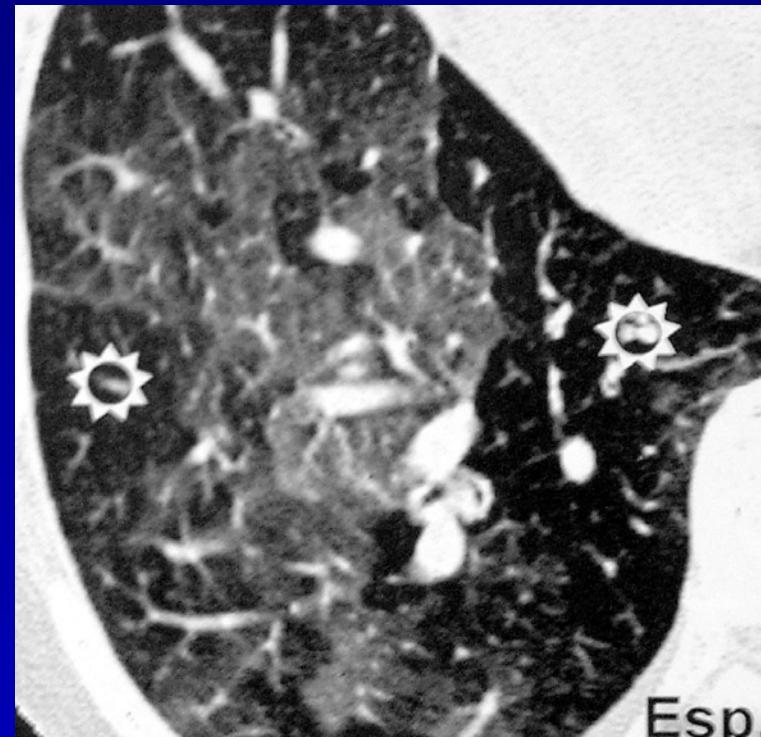
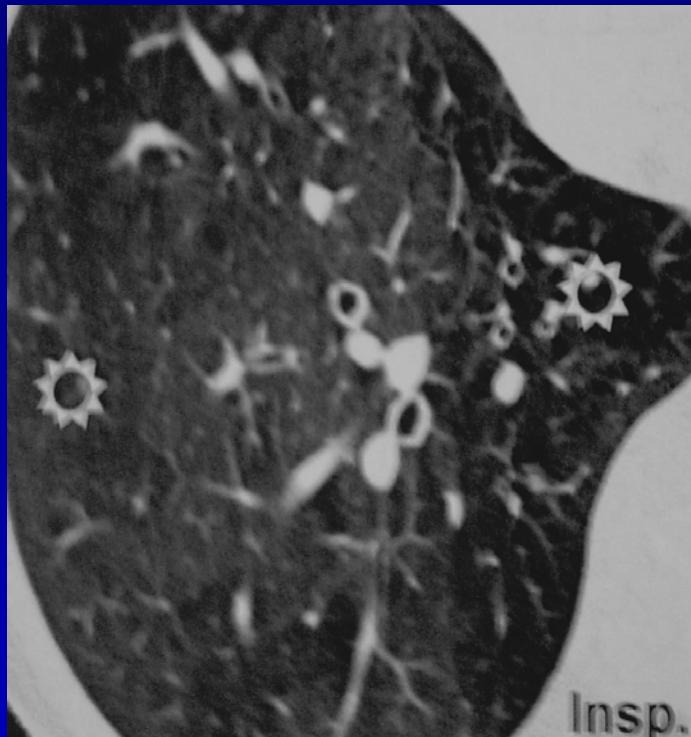


*Proteinosi alveolare*

# Pattern Addensativo

Oligoemia a mosaico con air trapping: aree di iperdiafania a chiazze spesso a distribuzione lobulare nel cui contesto i vasi sono ridotti di numero e calibro.

*Bronchiolite Costrittiva*

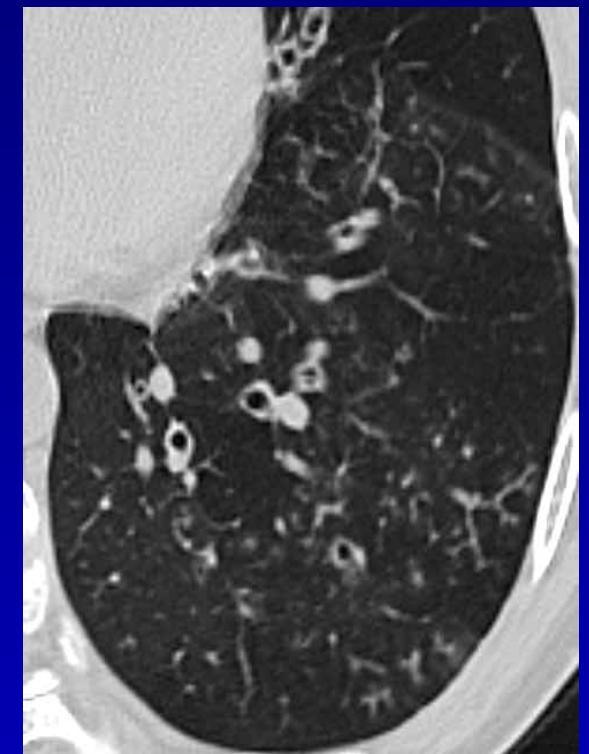
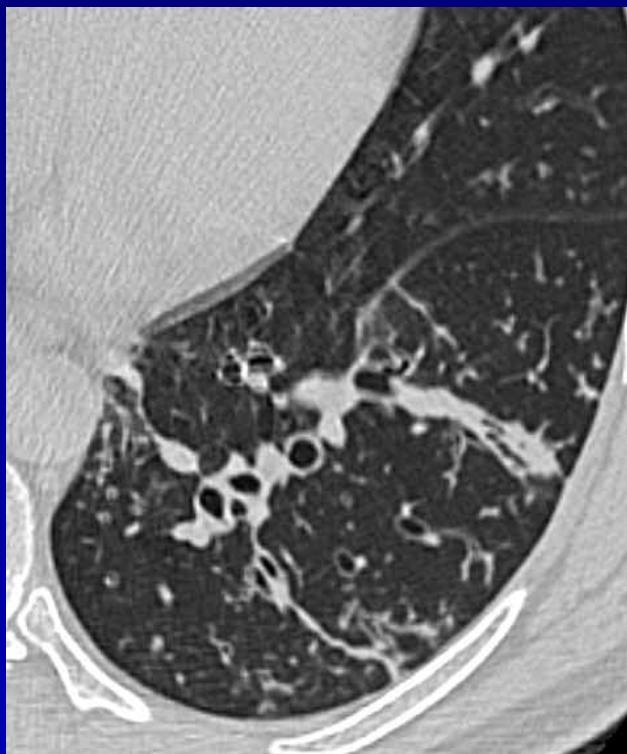
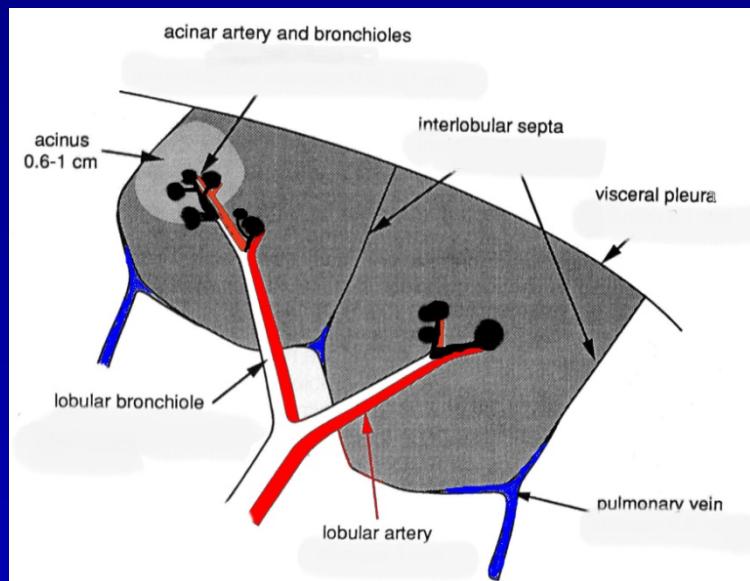


# Pattern Addensativo

**Tree in Bud:** opacità ramificate sottili che terminano con opacità nodulari situate alla periferia del polmone.

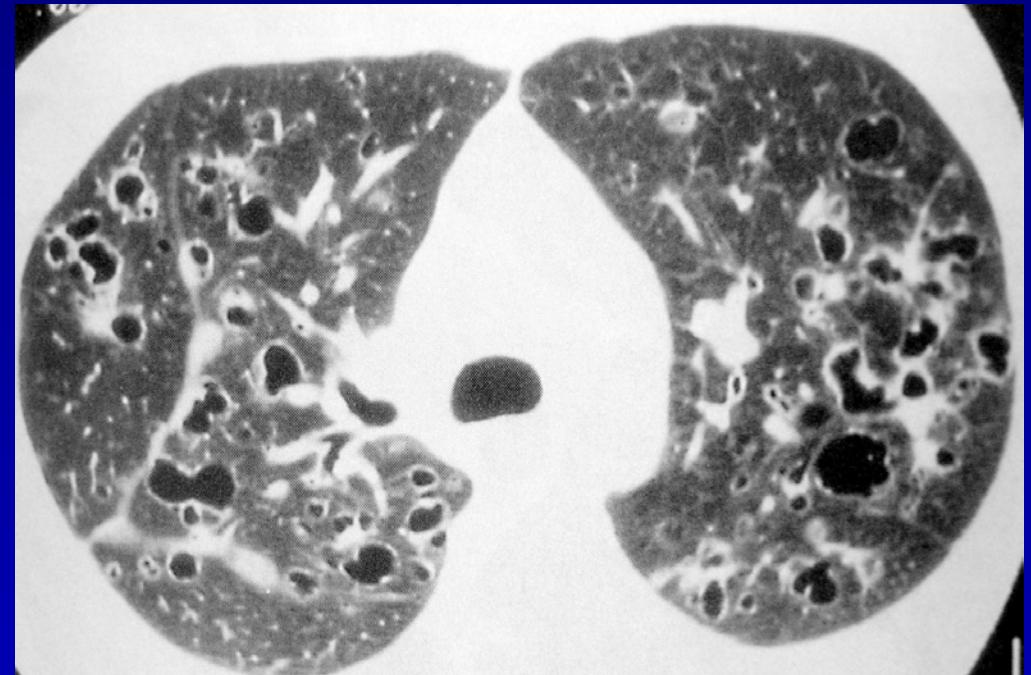
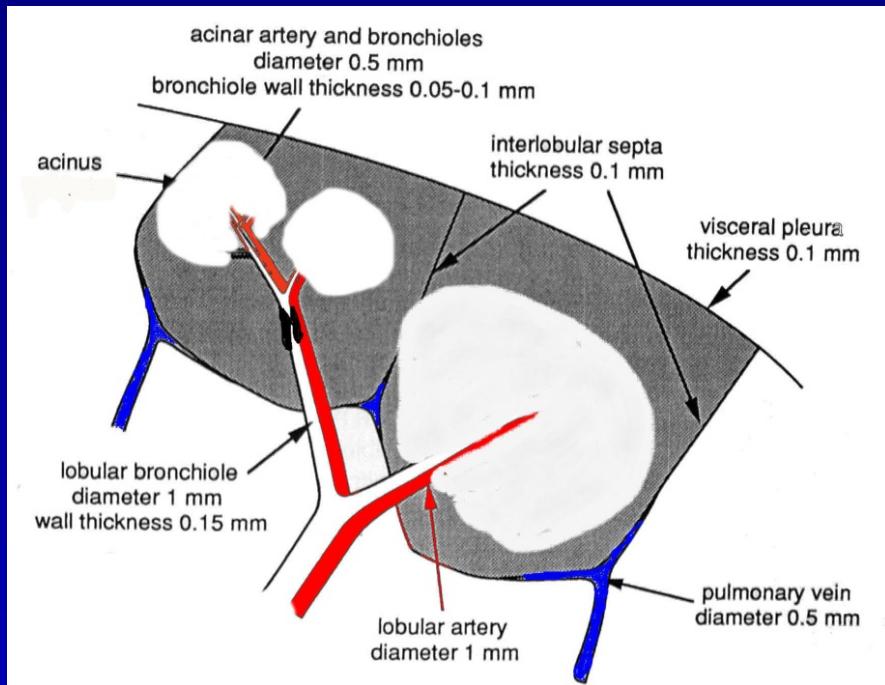
Tipico delle malattie con diffusione broncogena

- *Micobatteriosi atipiche*



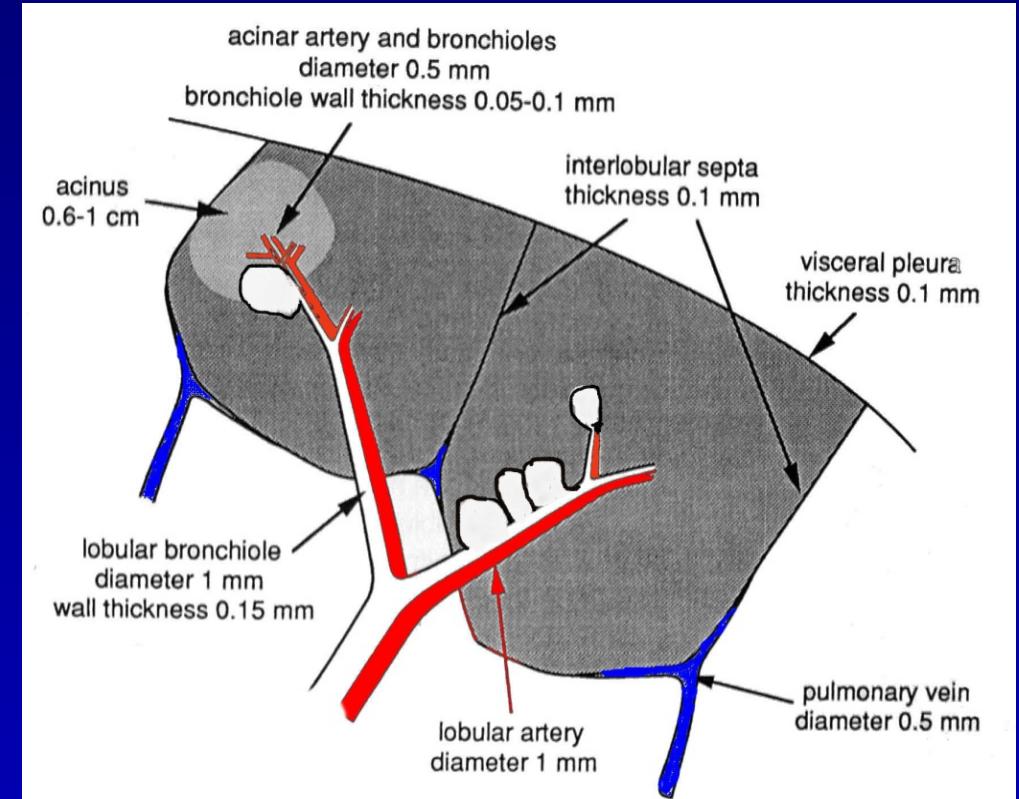
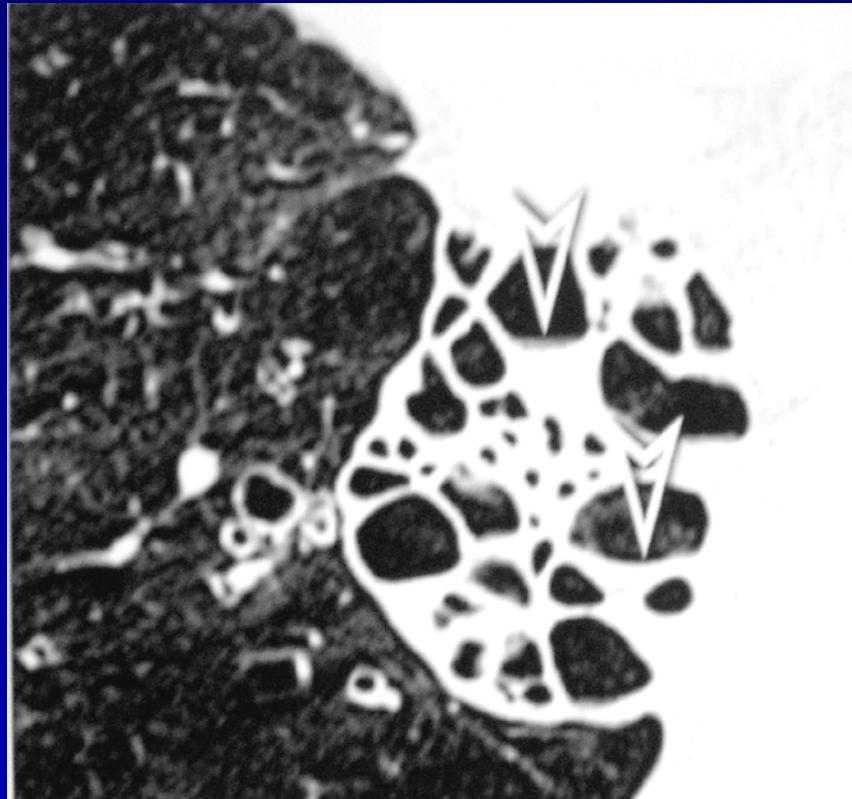
# Pattern Cistico

Areole di iperdiafania assoluta che occupano più o meno estesamente il parenchima polmonare con possibili pareti che le delimitano.



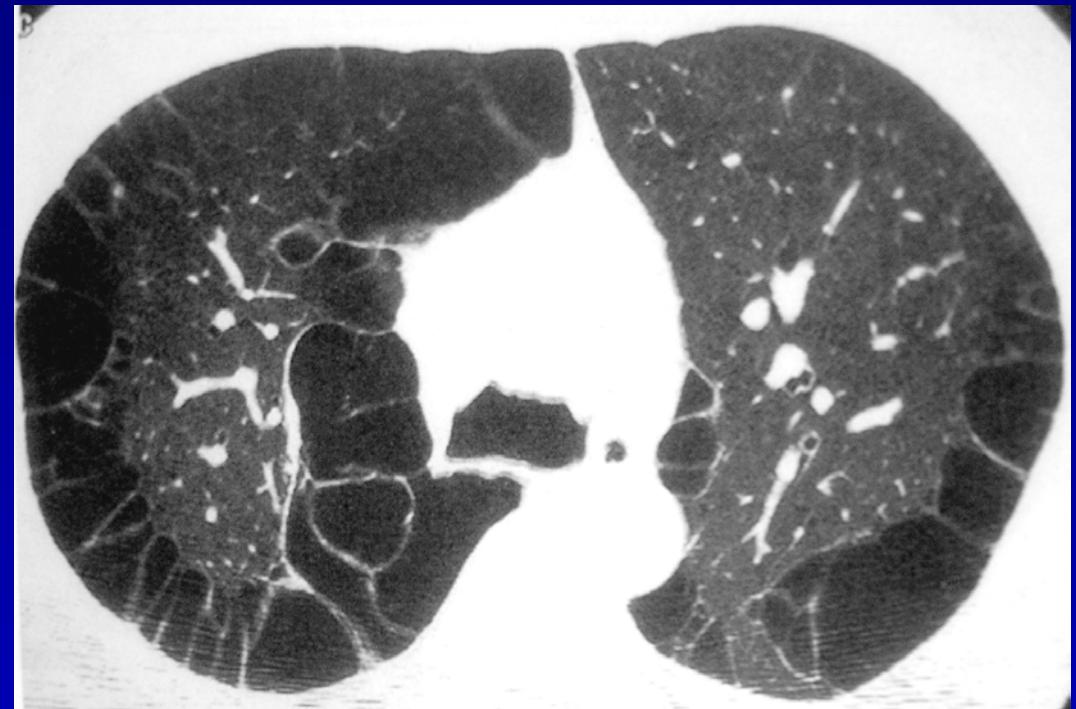
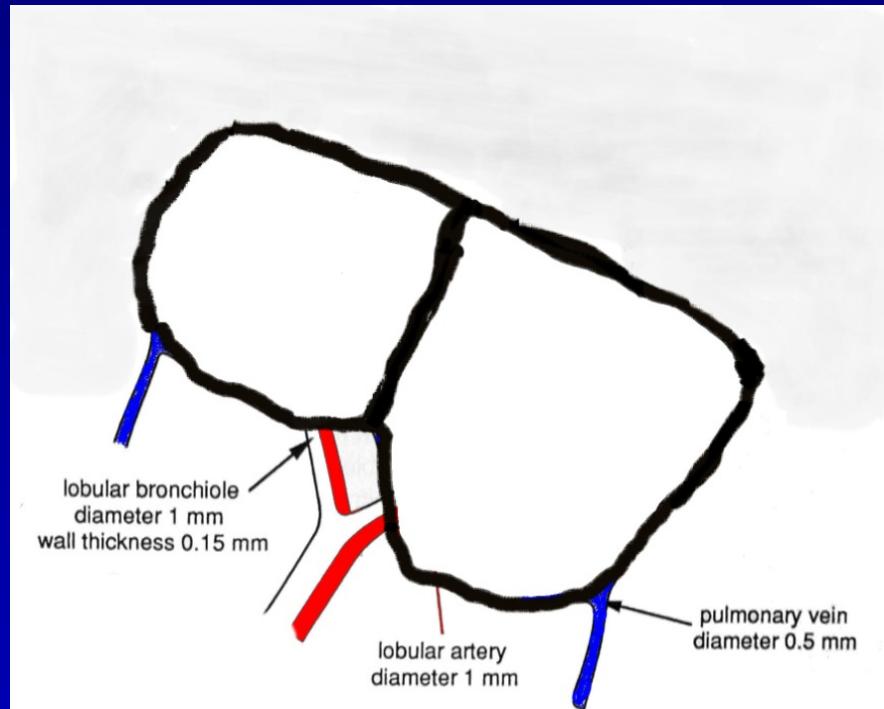
**Cisti a Grappolo:** raggruppate intorno al peduncolo broncovasale con pareti spesse, forme variabili, spesso inclusi o livelli idroaerei

*Bronchiectasie cilindriche*



**Cisti a Collana di Perle** : periferiche subpleuriche in un unico strato con pareti sottili costituite da setti interalveolari a volte ispessite da una minima fibrosi

*Enfisema*



**Honey Combing** :piccole cisti rotondeggianti a pareti spesse che si dispongono su più strati A FAVO D'API con architettura sovvertita, con bronchiectasie da trazione

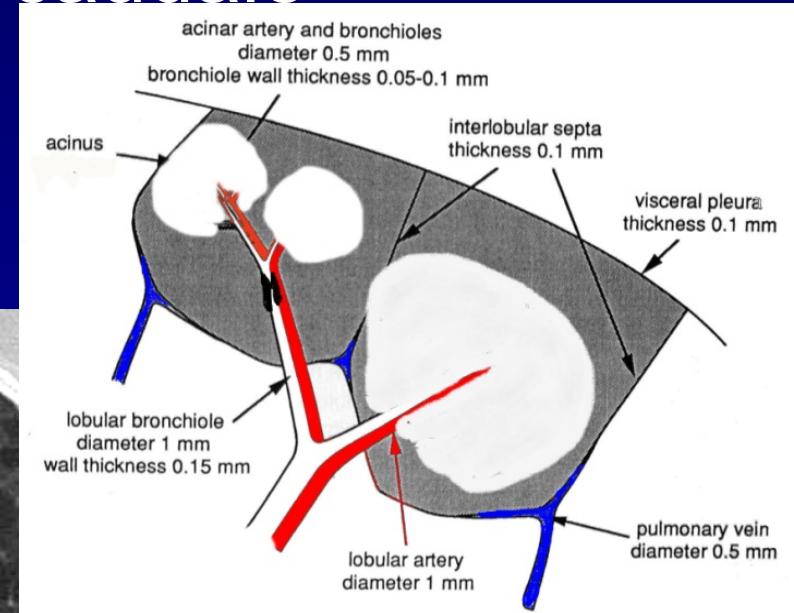
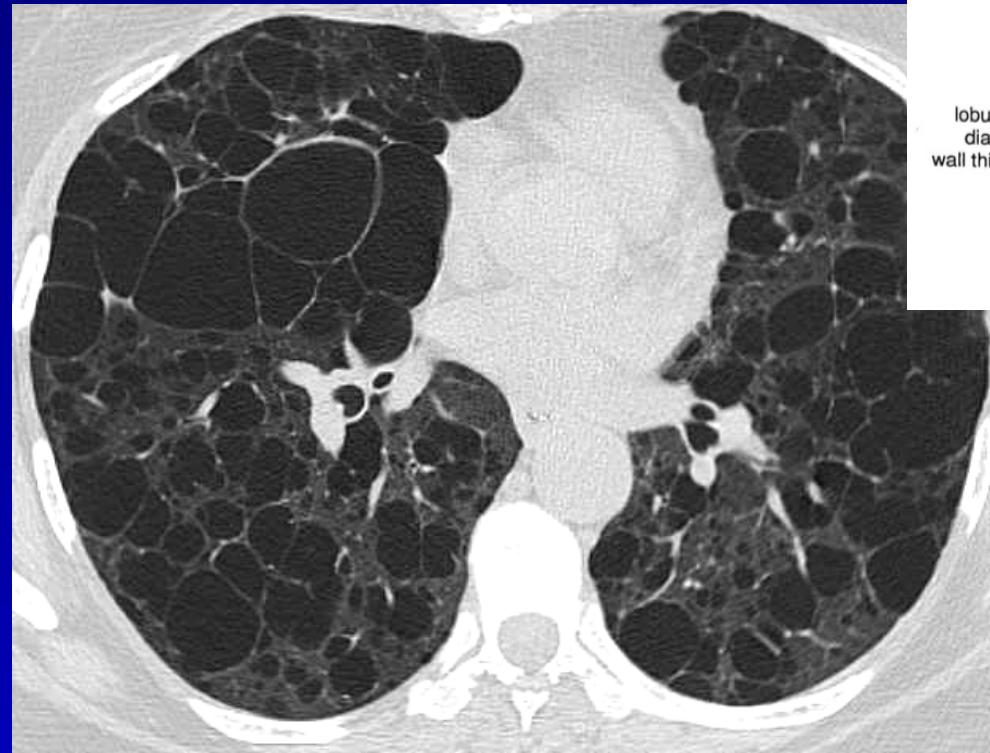
. *UIP*

. *Collagenopatie Evolute,*  
. *Asbestosi Evoluta*

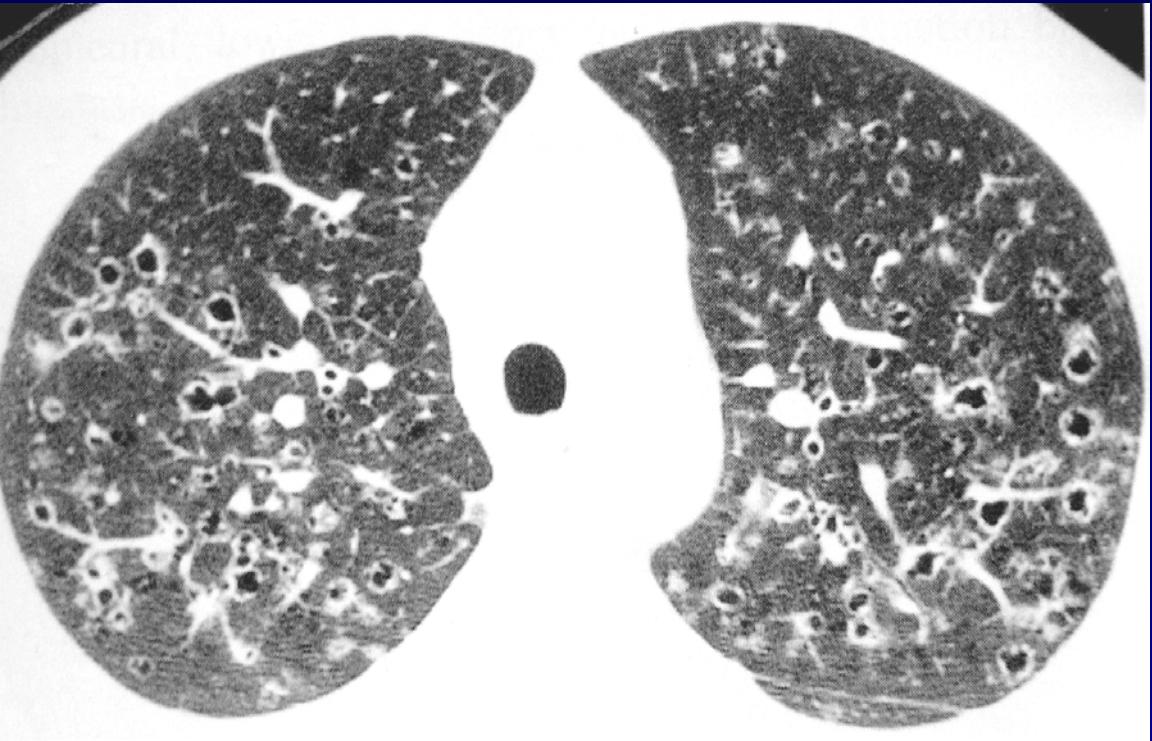
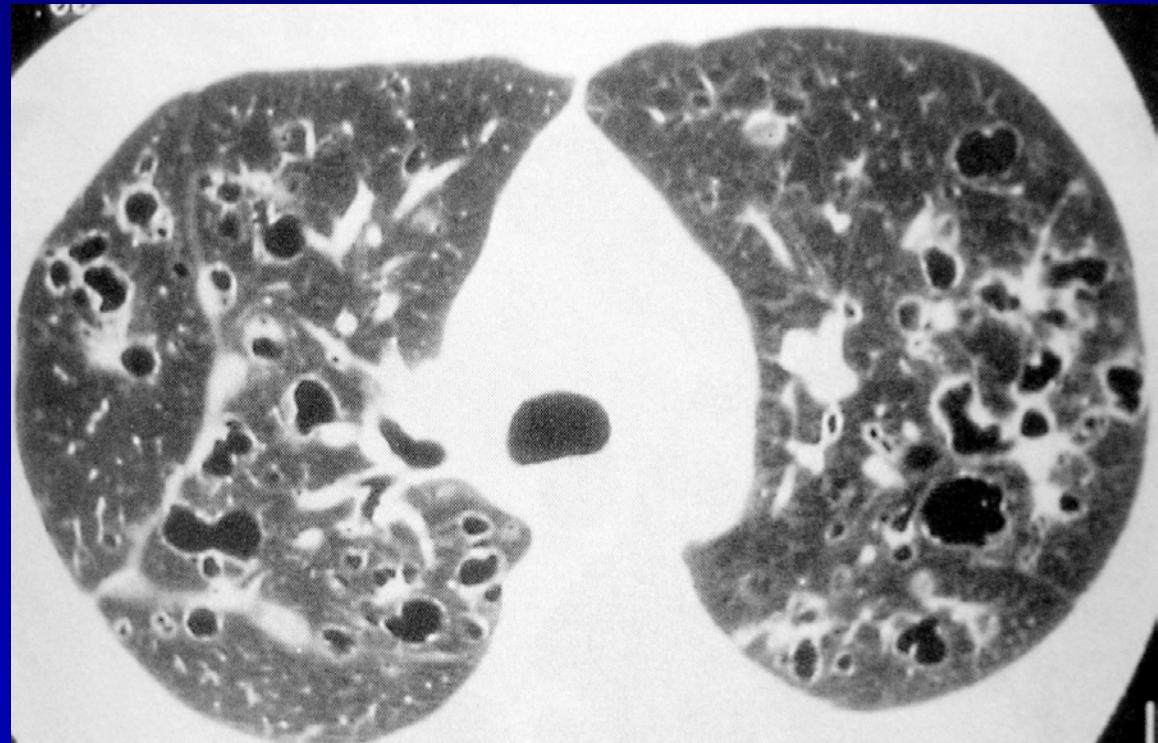


**Cisti con distribuzione random** : distribuzione casuale con pareti di diverso spessore . Malattie simili tra loro importante valutare la distribuzione craniocaudale

*Enfisema CentroLobulare,  
Istiocitosi X,  
LAM*



*Istiocitosi X*



## *Enfisema*



# GRAZIE PER L'ATTENZIONE

